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1976 U.S. AGRICULTURAL OUTLOOK

Papers Presented at the National Agricultural Outlook
Conference Sponsored by the U.S. Department
of Agriculture—Held in Washington, D.C.,
November 17–20, 1975

PREPARED FOR THE
COMMITTEE ON AGRICULTURE AND
FORESTRY
UNITED STATES SENATE

DECEMBER 18, 1975



U.S. SENATE
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WASHINGTON : 1975

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FOREWORD

The latest National Agricultural Outlook Conference was held in mid-November. This Conference is sponsored each year by the U.S. Department of Agriculture to provide the agricultural industry—from producers through consumers—with the latest information on production, prices, input supplies and the demand situation. However, the Conference goes beyond this and projects the direction and magnitude of agricultural trends over the upcoming year.

The Conference is of particular significance this year because of continuing uncertainty for agriculture and a virtual reversal in the trends for many commodities from last year.

A year ago, agriculture was facing a low and declining position for stocks of grains and soybeans as the result of a host of weather setbacks, and continued strength in export demand.

The resulting high feed costs and relatively low market prices of livestock was causing broad contraction in our livestock industry. Farm income was fairly strong but the strength was centered in the crop sector and, in fact, was uneven within that sector. This year our crop producers, on average, enjoyed one of the most favorable weather years in recent history. Record crop production has been achieved almost across the board. Stocks are being rebuilt and as a result prices have been slipping.

Today, livestock producers are finding a more favorable cost-price relationship and expanded production seems certain. This means that the income situation has improved for the livestock sector, although some weakening has occurred for crops.

The export situation during 1975 was very irregular. While agricultural exports were at a new high for the fiscal year ending June 30, 1975, shipping interruptions cast a serious shadow over the outlook for agricultural exports. Because of the increasing importance of exports to our producers this has cast uncertainty over all of agriculture.

In addition to these changes in the marketplace, our farmers are producing on a crash basis without the benefit of stabilizing farm programs. The many changes of the past three years—especially cost increases—have rendered the target price levels of the Agriculture and Consumer Protection Act of 1973 virtually inoperative. We must be aware that this could result in alternate years of surplus and scarcity. This would be disastrous for producers and consumers and the whole economy. Therefore we must be diligent in our considerations of the current situation and closely monitor the developments of the upcoming year.

In the interest of providing the members of the Senate Committee on Agriculture and Forestry, the Senate, and the general public with timely and reputable information regarding the general outlook and

situation for American agriculture in 1976, I have asked that the papers presented at this year's National Agricultural Outlook Conference be printed as a committee print. While the views and analyses presented in these papers are those of the authors and not of the committee or of the USDA, the committee nonetheless wishes to recognize that these conference speakers are professionals and experts in their respective fields.

HERMAN E. TALMADGE, *Chairman.*

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1976 ECONOMIC OUTLOOK

OPENING STATEMENT BY HON. J. PHIL CAMPBELL, UNDER SECRETARY OF AGRICULTURE

It is particularly appropriate this year that USDA's National Agricultural Outlook Conference is being held now, just before Thanksgiving week. For this year we should all be thankful for what has turned out to be an abundant harvest in the United States.

This harvest means many things to many people. To farmers, it means continuation of a good income situation, because the demand for their products is holding up. To marketers, the big volume means efficient use of their facilities. To foreign purchasers of our farm products, it's a godsend, because crops have been poor in many other countries this year. And to consumers here at home, it means less of a rise in food prices.

The bountiful crops this fall stand in sharp contrast to last year's disappointing, weather-reduced output. What we are seeing this fall is the kind of food power we must continue to have here at home to help offset some of the petroleum power being applied by others on us.

It also remains a fact of international life this year that world grain stocks are still quite low. That fact is not being played up as much as it was at this time last year. For one thing, our situation now is in a stocks rebuilding context, whereas last year they were being drawn down. Also, the major crop production problems this year are occurring in the countries that can afford shortfalls now and then. Last year, the problems centered in the have-not areas, raising the specter of outright famine on a large scale.

Nevertheless, the low-stocks situation worldwide remains very troublesome, pointing up the necessity for U.S. agricultural production to continue at full throttle.

There is another factor. On the crop export tables I used to examine, I had to look down at the bottom in the footnotes to find mention of the Soviet Union and the People's Republic of China. No more. They are now important customers.

Full, efficient agricultural production in the United States is thus a necessary fact of life nowadays. And that brings me to two points I wish to emphasize strongly to you today. I believe they are crucial to full agricultural production from our farmers.

One is the freedom farmers now enjoy to plant the crops they think they can do best with, without restriction. This freedom of choice for our farmers has been a factor, as the Economic Research Service has pointed out, in boosting U.S. agricultural productivity during the 1970's in contrast to the legislated stagnation in productivity that hung on through the late 1960's.

The second point follows from the first. In gaining his freedom to manage his agricultural production as he best sees fit, the farmer is now in need of vastly more production and marketing intelligence. Government no longer decides how much and what he'll plant. He has to decide that for himself. Should he hold onto his wheat instead of selling all of it now? Indeed, should he hedge in next year's wheat crop now?

You are attending this Outlook Conference with a main purpose of getting the best facts and intelligence available so as to answer such questions. What is ironic is that it used to be terribly important around here that farmers be given orders in timely fashion regarding what they could plant without penalty. Now it's terribly important that they be given the intelligence in time for them to make their own decisions.

You will remember that these outlook conferences were held for a few years in January. That may have been alright as long as the farmer had little leeway anyhow at planting time. The switch of the outlook conference meetings back to November is recognition of a changed situation, and of your increasing importance in determining the outcome.

Your services, and the information system which enables you to provide them, have been tested in the past and found to be highly credible, highly responsive. You will recall the corn blight outbreak in the summer of 1970. Had there not been your functional State-Federal information system in play then, one of two things would have happened, and perhaps both. A system would have had to be created, to become immediately operatable, at great costs. Or, the confusion resulting from a lack of information could have lead to desperation in the markets.

Economic and political developments, we have since learned, can have impacts similar to that of the corn blight outbreak with respect to production and market responses. Thus, your services in the context of today's uncertain world are indeed critical to the success of our agricultural system.

I mentioned at the beginning of these remarks that we should be thankful for our abundant harvests this year. Considering the fact that outlook information has become so crucial, I am personally thankful for something else. The outlook programs and the extension organizations and the economic departments most of you in the audience represent have had their ups and downs through the years. Thank goodness you have persevered. We need you now as never before.

U.S. ECONOMIC OUTLOOK

[By Paul MacAvoy, Member, Council of Economic Advisors]

Under Secretary Campbell suggested that there may be differences in forecasts here today. According to my calculation there are 450 economists in this room, so that there are now 900 different points of view. I would like myself to contribute at least six points of view on where the American economy is going in the coming year. Before doing so, however, let me mention a first point of controversy on where we now are. It is not altogether clear that three economists would be able to arrive at a consensus on the present state of the American economy. In the statistical materials now available, it appears that the United States economy grew at an 11.2 percent seasonally adjusted annual rate in the third quarter of this year, a much higher rate than 99 percent of the economists had forecast would occur. It is also much higher than anyone in the White House believed or dared hope would occur. The question arises, naturally, given this growth spurt whether there were statistical or other aberrations which might have caused it.

In fact, there were a number of important statistical quirks and events of a non-recurring nature in the third quarter. The statistical have to do with the use of obsolete 1958 price deflators to measure real growth in the United States. As you know, the procedure is to estimate growth rates in current dollar terms and then deflate them to obtain the real growth rate. Using a 1958 deflator with a very low value created, given the nominal dollar value, a very high estimate for real growth. The reason this is controversial is that there has been an important shift in the composition of output toward items with low 1958 price deflators which cause the given increase in spending to be associated with higher measured real growth than if more current deflators had been used. Hence, when the benchmark revisions are completed and real GNP is measured in 1972 rather than 1958 dollars, the rate of real growth this past quarter may be found to have been only around 9 percent rather than the preliminary indication of 11 percent. So that when various forecasters extol to you the recent performance, be very cautious.

The 9 percent to 11 percent rate is substantial, as large as in the first few months of past recoveries from recessions. Why it has occurred is important. Final sales grew by 4½ percent from the second to the third quarter, about the same as from the first to the second quarter. The remainder of the 9 percentage point increase in real GNP is due to the shift from sharply increasing to decreasing rates of inventory decumulation. Corporations have been reducing their inventories but rather than decrease them at 8 or 9 or 10 percent they were decreasing them only at 2 or 3 percent which meant that production was being increased.

We believe that roughly half of the inventory correction has already been completed and the remaining half is likely to be completed before the middle of 1976. Thus, if there is to be sustained recovery, it must be carried along by greater strength in final sales of goods and services. Our expectation is that final sales will grow by more than 5 percent from the fourth quarter of 1975 to the fourth quarter of 1976.

There is real strength in final consumption goods, in the sale of goods and services, to final consumers, for two principal reasons. The first has to do with inflation. The purchase of goods and services by consumers is strongly related to their expectations as to price changes in the future. It appears from the behavior of the last two or three years that if there is a widely held forecast that we are in for a period of rapid inflation, then consumers cut back on their purchases in order to add to their savings. Their primary concern is that the value of their savings remains roughly constant, so that dollar savings have to increase, and the savings rate itself may have to increase, in order to maintain the value of such balances. Our expectation is that inflation rates will be much lower in the coming one to two years than in the past, and when consumers are made aware of this, they will maintain high levels of consumption rather than savings and this is an important source of stimulus for the economy.

Let us pause for a moment on this forecast of prices. It is based in part on recent rates of inflation. Inflation has been decelerating in the last few months. Increases in both wholesale and consumer prices have averaged between 6 and 8 percent since September of last year while they were more than twice as high the year before. There is reason to believe that these rates may stay at the lower end of this range in coming months. For one thing, as you know very well, food prices which rose by 7.8 percent from September to September '74 to '75, are likely to increase by less of an annual rate at least until the middle of next year. Furthermore, the price of energy products in the CPI consisting of gasoline and motor oil, fuel oil, and coal will not rise by the 11 percent hike registered over the last 12 months. This assumes that we will have gradual decontrol of old oil over the 40 months now found in the conferees bill reported out last Friday, rather than the much more rapid decontrol assumed by instant elimination of the given price control now in effect. Given these two primary considerations of a slowing down in the rate of increase in prices of food and energy, we see consumer price increases tending toward 5 to 6 percent. With prices of producer durables rising less rapidly, therefore, we expect the GNP deflator to increase only by 5 to 6 percent except, of course, in the final quarter of the year.¹

The second reason why we believe that final sales will grow by more than 5 percent in real terms lies in the continued rapid rise in disposable real income. Since the first quarter of this year real income has increased at an average annual rate of 6.7 percent with over 2 percentage points of this rise being due to the non-refund features of the '75 tax cut. Even though we expect this rate of growth to decline to about 5 percent in '76 largely on account of the slow rise in transfer

¹ You had better watch this. In the final quarter, the deflator rises by around 1 percent more at an annual rate on account of Government pay increases which go into effect each October. So the Federal pay system hits you the last quarter of each year and the blow is reasonably great.

payments, such growth—coupled with small reductions in the saving rate—is sufficient to project more than a 5 percent rise in personal consumption expenditures.

I might add at this point that this assumption is another of these political assumptions that are so crucial in making this forecast. The price forecast depends critically on energy policy, on the decontrol program, now within hours of passage by Congress. The forecast as to consumer's disposable incomes depends critically on the tax reductions which are not within hours of passage but which will be hammered out by Congress and the Administration in the next month. If the President's program were put into effect, there would be stronger additional increases in real disposable income which would have a strengthening affect on consumer expenditures in the next two quarters. After that, because it's coupled with a reduction in Government outlays in expenditures by the Federal Government in fiscal year '77, then it would follow there would be a slightly depressing affect in the middle and latter part of next year. You had better watch the newspapers closely to determine how these tax reductions actually occur, because they will offset the phasing of your final forecasts.

Overall, the view of consumer expenditures which I am giving you, is rather optimistic. Consumption in the C+I+G definition of GNP is the strongest element of the three.

There are forecasts of I, which is investment and G which is Government. G is easiest to take care of and the most depressing. G is government expenditures at the state, local, and national level. The New York Times and the other newspapers strongly suggest that things are not going well in New York City and that this may very well spread to other large metropolitan and state regions. We had already forecast before the New York spectacular that there would be a low rate of growth of state and local Government expenditures, partly because voters are increasingly resistant to the growth of local and state government programs. The government purchases of goods and services in our forecast will grow only by two to three percent in real terms and that is the outside end of our forecast.

The more optimistic element is in business fixed investment, the I element. Business fixed investment is showing greater strength than in comparable stages of past recoveries. Instead of reaching a bottom two-quarters after the trough in the reference cycle, BFI this time has risen in the first quarter of general recovery. The rise had something to do with rather special conditions—most prominently, with a surge in the producer durable component of sales of automobiles to final consumers. As automobile sales begin to move ahead, then the investment of automotive and automotive supplying corporations has increased rather rapidly. Nonetheless, there is some evidence that business fixed investment is turning up generally. The Federal Reserve's industrial production index for business equipment has risen by over 2 percent since June. Non-defense orders in the capital goods industries have increased, even if unevenly, since March. The seesaw pattern of these orders received in the primary's metal sectors contributed to some recent instability there, but the outlook here is reasonably strong. With the majority of new investment now devoted to modernization, the growth in equipment purchases should be es-

pecially strong during the middle and latter part of next year while investments in structures will show little or no strength until the middle of next year.

Looking at investment as a whole, we expect around a 10 percent growth from the fourth quarter of this year to the fourth of next year. This contrasts with most other forecasts. For example, the OECD forecast calls for only $5\frac{1}{2}$ percent growth over this component. I want to warn you of this and to note that to forecast accurately business fixed investment is to possess a high skill. Most differences among forecasters lie in this area and we are on the optimistic side.

Given I+G, the elements of strength in this outlook should combine to hold the rise in unit labor costs below 5 percent for the coming four quarters. With the average total cost of production falling in relation to prices, profits should grow at relatively high rates to be more specific, we anticipate that the profit share will reach a cyclical high of over 11 percent of national income by the end of 1976 (the profit share has been less than 10 percent in every year since 1969).

With profits strong, with competition keen on account of available capacity, there is no reason for product prices to rise more than roughly 5 to $5\frac{1}{2}$ percent. At the same time the greatly enlarged cash flow and lower effective tax rates should make non-financial corporations increasingly inclined to invest in anticipation of rapidly growing demand. In this way, we see the elements of our forecast hanging together reasonably credibly.

Overall, we are looking for a growth rate in real GNP in the range of 6 to 7 percent for the coming four quarters. This is a strong or optimistic or idealistic or incredible forecast depending on how you want to add up your adjectives. But let me leave you not with euphoria—rather, with a sentence or two of caution. The parts of the forecast that concerns me are the rate of inflation and the rate of growth of investment. Inflation if more serious will be a product of significant demand changes or reduced supplies of food and energy. These will be addressed in a number of other sessions this week, and in Congress, so that there is little more for me to caution you on. Investment is driven by psychological and economic forces; thus forecasting it is a perilous but challenging profession. If you cannot do it well, then let me urge you to do it often.

U.S. ECONOMIC OUTLOOK

[By Sheldon Stahl, Vice President and Senior Economist, Federal Reserve Bank of Kansas City]

I appeared at this conference as a panelist two years ago. At that time, the Council of Economic Advisers was represented by a gentleman named Gary Seevers. I can recall rather clearly that his analysis of the state of the economy had a rather striking degree of similarity to the kind of optimism that was expressed here by the preceding speaker. I would point out to you that was in December 1973. There have been a number of changes that have taken place since I last met with this group, one of them being the departure of Herb Stein from the Council. I wanted to note that we would all miss his cheerful optimism, but that may have been a bit premature, because I didn't know what Dr. MacAvoy was going to be saying this morning.

In any event, I am delighted to be here. It was already acknowledged that economists are a group who seldom are in agreement, and that when they are in agreement it typically doesn't go very well for those on the outside who are listening to the economists. However, I think I would agree with Paul that there probably has been some significant overestimation or overstatement of the degree of strength of the economy on the heels of the most recent GNP release, but there is nonetheless a consensus insofar as the direction of economic activity is concerned. For that reason I'm really quite pleased to be here now, because as economists we have lived through this past period of travail beginning back in October of 1973, and they have not been the most pleasant times for economists. Indeed, they have been damned unpleasant if you happen to be an economist for the Federal Reserve System. These then are much better times to be an economist addressing himself or herself to the outlook. I might say as I look around I notice that there is a person who is not here, and for that reason I question whether this outlook conference is the real thing. I've looked around rather carefully and I don't see George Meany any place in this audience. And so I really can't take this conference too seriously. But I expect he is so busy protecting the interests of American consumers and farmers that he just has not had an opportunity to show.

I am always pleased when I can express for the consideration of the audience at least a somewhat different point of view than that to which they may have been exposed. During the course of my remarks it should be amply clear that I really don't share the same sense of optimism which I think was clearly acknowledged by Paul MacAvoy. He did say there are an awful lot of caveats attached to his forecast, but nonetheless, even if one accepts all the caveats it is

extremely difficult for me to come out quite as optimistic as he did. We have already been through a great deal in the American economy. There have been many, many changes since I last met with you. You may recall that we have lived through energy induced spasms; we survived sideways waffling; and, now we are on the verge of considerable growth in the economy after a period which has clearly been labeled as the worst business cycle recession in the entire post World War II period. So the question, I think, is not really where is the economy going. We're going up. The questions are, rather, how fast are we going and what is likely to be the longevity of this recovery period in which we now find ourselves. And, in this regard, I think it is important to address myself to some of the points that Dr. MacAvoy raised in his presentation, and to indicate some of the differences with which I view these forecasts.

I think it was rather significant that in terms of his sectoral analysis of the American economy, that he did express the fact that the Council was far more optimistic with respect to the consumption sector real final demands than perhaps others would be. But if you're going to be optimistic with respect to these things, then I think you would have to be a bit more specific than to just refer to the growth in disposable income. We have to deal with real consumer durable purchases, and you have to ask yourself what is the likelihood that we are going to see significant strength in real consumer durable purchases unless we see strength in the most significant components of real consumer durables outlays, mainly furniture and appliances and automobiles. Now what about the automobile situation in the U.S.? Anybody who is familiar with that industry has long since discounted the optimistic forecasts which industry leaders have made. Indeed as one looks at the performance of that industry over the last several years, it is quite apparent that there still is a significant shortfall in their willingness to come to terms with reality, the reality mainly that the American consumer, in the aggregate still generates a market demand curve which does in fact slope downward and to the right. Unless they are willing to completely ignore that consideration, I would say they are not really addressing themselves to singular realities with respect to facts of the marketplace, when prices of automobiles continue to rise at a time when demands were falling off at record rates. Responsible spokesmen from the industry alleged that reducing prices, if indeed they could reduce prices, would not have any particular impact on the sales of automobiles. I presume that they are suggesting that the demand for autos either is price inelastic at a minimum, or even that the demand for automobiles might be rather different than the market demand for other products, in that the demand curve would slope upward rather than downward. Now I find myself in disagreement with this basic approach. As far as I'm concerned automobiles don't perform that way, and any auto executive who takes the position that prices don't have much to do with unit sales is in serious error.

If you examine the very recent performance of the auto industry, it has been described as jubilantly buoyant. It is only so when you contrast it with the disaster of October 1974 and the disastrous early November of 1974. In fact, autos have no place to go but up. And audience after audience which I address indicates by a show of hands that

there is little or no enthusiasm in terms of the purchase of a new 1976 automobile. The fact is that once again the industry has done what it did in the past year, in announcing in advance, price increases on their new models which served to stimulate the sales of their existing unsold inventories. This is really why the unit sales figures for automobiles in the third quarter when you got a 28 percent increase in consumer durables sales obviously weren't as good as they imply. These sales were borrowed from the 1976 model year, much as those at the close of the 1974 model year were borrowed from 1975. If one, therefore, takes the position that automobiles are not likely to be a singular source of strength in 1976, then it's rather difficult to come up with a repetition of the sizable growth of consumer durable outlays that we saw in the third quarter of this year. Indeed, as I listened to Paul MacAvoy, I recognized that he did talk about modest reductions in the saving rate, as well as increases in disposable income, which would serve to fuel consumer durable spending. But the fact is, there already has been a very dramatic reduction in the saving rate which took place in the third quarter, from 10.6 percent down to 7.7 percent, which is unlikely to be repeated. It was that tremendous fall in that saving rate which led to the strength in durables that we saw in the third quarter. So here I find myself considerably less optimistic with respect to this chief component of consumer durables spending.

Another major component of durable goods spending is on furniture and appliances. To the extent that we have more than simply replacement expenditures, it is dependent upon the relative strengths or weaknesses of home building. I think it's rather interesting that not much has been said about the outlook for housing in 1976. Unless one is willing to forecast a significantly stronger housing market than presently seems to be in the works, it is difficult to come up with large increases in consumer durables spending for furniture and appliances. Although the home building industry is significantly higher than it was some months ago, it still remains at about half the rate of annual starts which we experienced as little as two years ago. And the outlook for housing as indicated on the part of representative spokesmen from that industry is not at all optimistic. Permits have shown a little bit of strength in recent months but they still are running at an annual rate of about a million units, which suggests that there's unlikely to be much of an acceleration in the housing industry.

Yet in the face of that weakness, it seems as though the kinds of questions relative to housing to try to explain why that market is as depressed as it is, those kinds of questions we should be asking, are not being asked. Just as they're not being asked of the auto industry, where it seems as though questions should at least revolve about the price of the car which is being offered for sale. When one begins to understand what has been happening to housing prices, and when one reflects on the fact the median price of a new single family dwelling in the United States is in excess of \$43,000, you can begin to comprehend why housing is a depressed industry. Now I take rather a different point of view than does George Meany with respect to troubles in housing. As far as he sees it, the troubles are quite simple, and they're caused by the Federal Reserve System. If indeed, the Fed were more generous in its availability of money and credit, and, if indeed mort-

gage interest rates were lower than they are right now, George Meany says more houses would be built and more houses would be sold. Now, if one simply wants to ask the question, would there be more houses built if there were lower mortgage rates and greater mortgage availability, the answer is unquestionably yes, there would be. So you have to admit that there is at least an element of truth in the position. But then you have to ask, is this the major reason for the problems in housing, and I think the answer is clearly no. You're dealing with an industry in which year after year costs have continued to rise without any consideration for the capability of the average home purchaser to undertake the commitment of buying a new house. And, at \$43,000 you are dealing with a situation in which the product has been priced out of the reach of a significant number of would-be new home buyers. In the face of these kinds of realities, what has been the response of the building trades unions and indeed of the home building industry, itself. It's been predictable. It has been to run to the Congress of the United States and ask for help. It was extended in the form of a 5 percent tax rebate up to a maximum of \$2,000, in order to unload the existing heavy stock of unsold houses. Did it help? Some. But is it the answer to the housing problem? The answer of course is no. Because if that gimmick helped some, as housing costs continue to escalate, they are going to have to ask for more from Congress. Unless the industry is willing to address itself to the question of how one builds a house that satisfies the housing requirements of the average home purchaser at a price that they can afford to pay, we are not going to have a mass home building market, and we are not going to see the kind of strength in housing which has typically accompanied previous business expansions. So I think that for the residential construction component, I find myself admittedly somewhat pessimistic.

I do agree with the view which has been expressed regarding inventories. It is pretty clear that the national income accounting system, which takes reductions in the rate of decumulation in inventories and totals this up as a plus in the GNP, would likely mislead people by implying elements of strength which might not be there. So I think Paul's observations on inventories is quite correct. But when we get to business fixed investment, when we get to capital outlays, it's pretty clear that again there is a difference between us. If I'm not mistaken, the estimate of the Council was for a 10 percent increase in real business fixed investment between the fourth quarter 1975 and the fourth quarter 1976. This was admittedly higher than OECD's forecast. But it's also a lot higher than McGraw-Hill's which was recently released, and which says a 9 percent increase in nominal plant and equipment spending in 1976 over 1975. Given the capital goods price increases anticipated, this would most likely mean zero increase in real capital outlays in 1976. In the face of excessive amounts of unused capacity, with aggregate capacity utilization around 70 percent, it is rather difficult for me to conclude that businessmen are at long last going to open their pocketbooks and significantly expand their capital outlays in 1976.

Finally, if one views the government sector, I think it is quite correct that the size of the deficit notwithstanding, actual expenditures for goods and services by all units of government in 1976 will not show a great deal more strength than we've seen in 1975. Perhaps a final

observation with regard to one of the outlook considerations raised earlier, the rather optimistic expected unit labor cost increase of less than 4 to 5 percent increase in fourth quarter 1975 to fourth quarter 1976. I know we have an awful lot of unused capacity. I know that if that capacity is put to work the productivity increases are rather sizable so that we can expect some downward pressure on unit labor costs. But I find it rather difficult to see any repetition of the decline in unit labor costs that we saw in the third quarter of this year. Even though one can expect a plus from the productivity side, this should be put in the perspective of the largest collective bargaining calendar that we will be seeing in 1976 compared to the past three years. It comes at a time when their real spendable pay has, for the most part, dropped quarter after quarter. It will come admittedly at a time when the thrust in economic activity will be upward. All of those things present considerable bargaining pressures, designed to achieve wage increases far less moderate than they have been in 1975. So any views of unit labor costs improvement have to be at least qualified by these kinds of caveats.

Finally, there is the observation that with keen competition in the American economy in 1976, there is really no reason for prices to rise much more than 4-5 percent. When it gets to this question of keen competition in the American economy, it strikes a subject that is really close to my heart. And that relates to the structure of the American economy, and the extent to which this competition to which we continually allude when we make our public policy, really does in fact exist. The kind of improvement in prices which was referred to earlier with respect to consumer prices, clearly is not true when one examines the behavior of industrial commodity prices at wholesale. For the last six months they show a steady acceleration in the rate of increase. I've already commented on the automobile industry which has a rather interesting capability to raise its prices every time demand falls off. Now the explanation of the industry is quite simple. Obviously if you sell less units, you have to sell everyone of those units at a little bit higher price to maintain your total revenue. It's a strange kind of economic world but nonetheless that's the way it sounds when we listen to these folks. One of the reasons publicly stated for not being able to reduce prices in the face of weak demand was that to take such actions would result in losses to those companies. Indeed Leonard Woodcock of the United Auto Workers came out on the side of the auto companies suggesting that they could not lower prices because to do so would generate losses.

Well I used to think that the free enterprise system had a certain beautiful symmetry involved. When you did a good job and you correctly guessed the market and you assumed your risks, you were entitled to make a profit. Indeed there were some relationships between risks and profits and the bearing of those risks properly had rewards. On the other hand, if you made a bad guess; if you made a bad judgment; then there was nothing in the free enterprise system which says that you could not in fact lose your assets. Indeed that is precisely the kind of adjustment that the market would make if it were indeed free and characterized by keen competition. Yet we know that autos are not unique, we know that in those industries such as autos, steel, chemicals, pharmaceutical industries which most of would accept as

oligopolistic in structure, the kinds of price responsiveness that competitive economic theory suggests should occur at the time demand slacks generally does not happen. And thus we continually assume an economy operating in a manner which no longer exists. To carry that even further we predicate our public policies on that assumption and in so doing periodically pause to scratch our heads and reflect why it is that the economy doesn't really perform the way it is supposed to. And so in terms of public policies, most of our stress continues to remain on the macroeconomic approach to appropriate monetary and fiscal stimulus or restraint to either increase growth or to reduce the rate of aggregate demand to bring prices under control. And the results have been some rather sharp and painful economic shocks. And to the extent that public policies begin to acknowledge the forthcoming political year, it is indeed conceivable that we may get policies which may carry with them the prospect of certain short-term benefits with a deferral of consideration of those long-term costs which are attendant to the short-term benefits. Yet, I can think of no more dramatic example of what happens when public policies are designed to maximize short-term gains and to minimize concern for long-run costs than to take a look at the problems of New York City. For the Honorable Abe Beame the future has been compressed to today, the long-run costs are right now, and the benefits have turned out to be ephemeral as hell.

Thus, in the final analysis I have to say that unless we are willing to address ourselves with vigor and assertiveness to the matter of microeconomic policies which deal with structural imperfections; unless we are willing to recognize that a government policy which tries to guarantee no losses for large corporate units and for large labor units is a policy which ultimately must generate only inflation and very little in the way of real gains, we're not going to make a great deal of progress. For in company after company and in labor market after labor market we have chosen to ignore basic realities. Now, unless we face up to the reality of far less than "keen" competition in the marketplace, no matter how smart we are, no matter how lucky we are in our macroeconomic policies, the same problems of inflation, recession, and underutilization of our resources are going to plague us in the future.

I think I would agree with the observations of one of the more distinguished former residents of our Tenth Federal Reserve District, the late Will Rogers. He observed that the past history of America has been characterized by three distinct stages. The first involved the passing of the antelope, the second, the passing of the buffalo, and the third involved the passing of the buck. I have a hunch that we haven't yet emerged from the third stage. Those who really ought to recognize why we have the kinds of problems we have, continue to look around and point to the faults of others. It is probably appropriate to remind you of what William Shakespeare wrote in *Julius Caesar*. There is a line that says, "the fault dear Brutus is not in our stars but in ourselves that we are underlings." And as long as public policies and those who promulgate them refuse to accept the existence of visible market imperfections, as long as public policy chooses to continue to address itself to a competitive economic structure which does not bear more than perhaps a passing resemblance to the real economy, the long-term goals of full employment and price stability will continue to elude us.

THE CHANGING WORLD ECONOMY OF THE 1970'S ^a

[By Alfred Reifman, Senior Specialist in International Economics, Congressional Research Service, Library of Congress]

In the last two years the world economy has been rocked by severe recession, hyper-inflation, a staggering hike in oil prices, and increased assertiveness of the developing countries.

What happened to the world economy in the past two years? What is the immediate outlook? Do recent developments mark a sharp break with the past—are we now in a radically new international economic environment? What are the major international economic problems facing policy makers today?

I. WHAT HAPPENED IN 1973-75?

Over the past three years the world has suffered—and continues to suffer—from four major plagues, fewer than the number inflicted on the Egyptians in the Old Testament, but more than usual for such a brief period of time.

1. *Recession*: Since late 1973, the world economy has been suffering from an economic recession:

It is severe. Unemployment in the industrial countries has reached levels not seen since the Great Depression of the 1930's.

It is widespread. Few countries have been immune. The downturn in economic activity started in the United States in late 1973, spread to the others in early 1974 and to the developing countries after the middle of 1974.

The economic downturn was the result of four basic factors:

The unsustainable economic expansion of 1972-73.

Inflation and government measures to cope with it.

Shortages of imported supplies of basic materials.

The stock of the oil embargo and price increase of 1973.

Fear of inflation has inhibited countries from taking vigorous measures to counter the recession for most of 1974 and early 1975. Indeed, it seemed as if each industrial country was waiting for another to take expansionary measures to rekindle an export-led recovery.

To an unanticipated extent increased demand by OPEC countries filled part of the gap, but was far from sufficient.

However, in response to expansionary fiscal and monetary policies of most industrial countries, the downward momentum was stopped by mid-1975. There are signs that an upturn has begun.

2. *Inflation*: In 1973-74, the industrial countries experienced double-digit inflation. While this has been a fact of life for some developing

^a The views expressed in this paper do not necessarily represent those of the Congressional Research Service.

countries, it was a new and searing experience for the industrial countries.

The inflation, which had been gathering momentum since the mid-1960's, was given a boost by the expansionary policies the major industrial powers adopted to get themselves out of the economic slowdown of 1970–71. The result was an uncommon, simultaneous economic boom in the industrial countries in 1972–73. In addition, inflation was given added stimuli in those years by crop failures in the Soviet Union and elsewhere, and, of course, sharp increases in the price of oil in 1973–74.

The recession has cooled the inflationary fires considerably and the industrial countries are adjusting to the higher level of energy prices. (Indeed, since early 1974 the world price of oil has been steady in monetary terms and declining in real terms.) Double-digit inflation no longer exists in the industrial countries. Raw materials and food prices have come down sharply from their 1974 highs.

Nevertheless, in most countries prices are still rising at a pace much above historical levels. As noted earlier, fear of rekindling the inflationary fires is inhibiting governments from full use of expansionary measures to reduce unemployment which also remains abnormally high.

3. *Cost of energy*: The quadrupling of oil prices in 1973–74, severely shocked the international economic system. The shock may well have exceeded any other received by the world economy in the same brief period of time.

The increase in oil prices was a major factor in the double-digit inflation of 1973–74. Some 2 to 3 percentage points were added to the world inflation rate by the increase in the price of oil and the resultant price increases in other sources of energy.

The recession was deepened, and may even have been triggered, by the abrupt and massive increase in the cost of OPEC oil. Increased payments to the oil-exporting countries, and domestic energy-producing companies, were only partly offset by their increased spending. The result was a sharp cut in purchasing power similar to that which comes from an excise tax. It probably accounted for half of the drop in U.S. output in 1973–74.

The increased cost of oil caused a massive disequilibrium in international trade and payments:

OPEC net earnings on current account went from \$6 billion in 1973 to \$70 billion in 1974, a swing of \$64 billion.

The current balance of the industrial countries deteriorated by over \$20 billion—a surplus of \$10 billion on current account in 1973 shifted to a deficit of almost \$12 billion in 1974.

Even larger was the impact on the developing countries (excluding the major oil exporters); a deficit of \$8 billion in 1973 soared to \$40 billion in 1974.^b

Some observers expected these large imbalances to cause a collapse of the international financial system or restrictions on trade and capital flows. The result would have been a further deepening of the world recession and a retreat to the nationalistic economic policies of the 1930's.

^b Source: *Annual Report 1975*, International Monetary Fund, Washington, D.C., p. 13.

Chaos, however, has not resulted. The economic recession reduced the deficits of the oil-importing countries below what they otherwise would have been. The oil-exporting countries increased their imports markedly, by three-quarters in 1974 and by almost two-thirds in 1975. Finally, the OPEC countries invested their huge financial surpluses in the world's financial markets—they had little other choice. These three factors, together with the expansion of official financing, met the most serious international financial problems of last year.

4. *The persistence of poverty and the increased aggressiveness of the poor countries:* Despite the rapid and widespread economic growth of the entire world over the past three decades, poverty remains the common lot of the bulk of mankind. Of the 2½ billion people in non-Communist countries, one billion live in countries with less than \$200 annual income per person, three-quarters of a million live in countries where the average is some \$500 per person. Prospects for improvement in the very low-income countries over the rest of the decade are rated as nil by the World Bank. At the same time, incomes of the industrial countries, with less than 0.7 billion people, is approaching \$4,000 per capita. Thus, it is easy to understand the frustration and rage of the developing countries, or at least their elites, in the era of instant communications and rising expectations.

The result has been a demand for a "New International Economic Order", a radical break from the established one.

INCOME LEVELS, 1970-80, FOR DEVELOPED AND DEVELOPING COUNTRIES¹ (IN 1970 DOLLARS)

Country group	1975 population (in millions)	GNP per capita		Percent of GNP growth rate per capita p.a. ²
		1970	1980 ²	
I. Low-income countries (under \$200 per capita p.2.)-----	1,000	\$105	\$108	0.2
II. Middle-income countries (over \$200 per capita p.a.)-----	725	410	540	2.8
III. OECD countries-----	625	3,100	4,000	2.6

¹ Excludes centrally planned economies and OPEC.

² Assumes no increase in flow of capital (in real terms) to developing countries from 1976-80.

Source: Address to the Board of Governors, World Bank, by Robert S. McNamara, Sept. 1, 1975, p. 7.

II. WHAT IS THE IMMEDIATE OUTLOOK FOR THE WORLD ECONOMY?

A. *Output and Unemployment:*^c By the middle of this year, every major industrial country had taken expansionary measures to stop and reverse the recession. The downward slide seems to have ended. What remains uncertain is the timing, vigor and persistence of the upturn.

Governments are still shaken by the virulence of the inflation of 1972-73 and they have been cautious in their use of expansionary economic policies. And, given the importance of the United States in the world economy, much depends on the vigor of the U.S. recovery.

The United States is leading the rest of the world out of the recession. Recovery in the United States is probably inducing economic expansion abroad. But, this is not due to increased U.S. imports (compared to exports). On the contrary, despite the high cost of im-

^c Much of this section is drawn from an unpublished memorandum of Helen Junz and Doral Cooper, Council of Economic Advisers, September 18, 1975.

ported oil, the excess of U.S. exports over imports has increased in 1975, averaging over one billion dollars a month over the most recent 3-month period (June–August), compared to \$200 million in 1974.

Even if this were not so, the direct economic impact of U.S. expansion on the rest of the industrial world is likely to be quite limited because the U.S. share in their trade and, even more so, GNP, is limited. The only way to explain the urgency with which German Chancellor Schmidt and French President Giscard view expansionary U.S. economic policies is for the salutary impact U.S. measures have on the expectations of foreign businessmen and on the willingness of public opinion abroad to support expansionary measures of their governments. Moreover, with the United States in the vanguard, there is less fear of balance-of-payments problems.

Recovery in Europe is lagging considerably behind that in the United States, Japan and Canada. This is expected to continue through 1976.

Final demand remains weak in all countries as household savings have risen to historic highs, reflecting uncertainty about employment prospects and the need to rebuild savings in the face of past and expected price rises. Thus, private consumption has not given the world economy the stimulus needed.

At the same time, external demand has fallen. For the first time in the postwar period, since the second half of 1974 there has been an absolute fall in the volume of world trade. The major drop has been in imports of industrial countries. Exports to OPEC countries have risen; exports to Communist countries have remained high; exports to non-oil developing countries have declined only slightly as they have drawn on their financial reserves and trade credits.

In the coming months, exports to OPEC and other developing countries are not likely to provide much, if any, additional impetus to economic recovery of the industrial countries. The OPEC countries will find it difficult to increase their rate of imports, already swollen beyond all prior forecasts, as they run into physical and financial constraints. Imports of other developing countries may well decline, reflecting the recent fall in commodity prices (and LDC earnings) and difficulties in obtaining new foreign credits.

Virtually the only engine for sustained recovery in late 1975 is government fiscal and monetary policy. Large reflationary programs have recently been taken in Italy and France, and somewhat more modest ones in Japan and Germany. Monetary policy has been eased everywhere.

Unemployment, as usual, is likely to lag behind the recovery of production. Indeed, the OECD Secretariat expects a decline in U.S. unemployment to be offset by further increases in Europe in 1976, raising total unemployment above the current level of 15 million people.

B. Prices: Price rises will continue to moderate next year, but the OECD Secretariat puts the rise in consumer prices at 8 percent for the industrial countries as a whole. This is still uncomfortably high. And, price increases in Britain—now running at 20 percent—will continue to be a major problem.

Inflation in Europe may well continue to be higher than in the United States for the next year or so. Three factors imply this—relatively high increases in wages, higher dependence on imported energy,

and, the recent strengthening of the dollar with a resultant rise in the cost of imported raw materials from currencies tied to the dollar.

C. *The Cost of Energy and the Developing Countries*: The industrial world is adjusting, though not painlessly, to the increased cost of oil in 1973-74. Since then oil prices have declined in real terms as the general price level has risen.

However, very real problems persist for the developing countries. Most of them are major importers of oil. Their exports have been inhibited by the economic recession of the industrial countries. The sharp gains in the terms of trade which they experienced in 1973 has been largely wiped out in 1974 and 1975. Prospects for the rest of this year and for next are that most of the developing countries will have very serious needs for external financing^d at a time when their borrowing capabilities have been greatly reduced.

The *abrupt increase* in the price of oil has had a disruptive effect on the world economy, contributing to world inflation, unemployment, and balance-of-payments disequilibria. These problems can be, and are being, mitigated by appropriate government measures and by the absence of further sharp increases in the price of oil.

The *high level* of oil prices, however, is another matter. Its impact is to shift world income from oil consumers to producers. The price increases of 1973-74 are causing a transfer of 2 percent of the current gross national product of the industrial countries to the oil exporters.^e

This is a very large sum, approached in modern times only by early Marshall Plan aid to Europe.

The redistribution of income is not entirely "bad." Outside of the Persian Gulf countries—whose per capita incomes are now astronomical—the other oil exporters have incomes which are quite low. By 1980 average per capita incomes of all OPEC countries will be roughly \$600 per year, compared to \$4,000 to over \$5,000 for the industrial countries. Thus, discounting from the unprecedented shock (and cost) to the world economy of the abrupt rise in energy prices, and the excessive increase in income of the Persian Gulf, the shift of income from the industrial countries to the OPEC countries as a group cannot be condemned out of hand.

However, a good part of the redistribution of income is at the expense of the poorest people of the world—the one billion people of South Asia, Tropical Africa and Central America who have per capita incomes averaging \$200 or less per year. These are the countries which are suffering the most from the high level of oil prices.

Despite this, the non-oil producing LDCs have supported OPEC, pleased that the rich countries were kicked in the shins (though they were hit on the head), anxious to follow the OPEC example for other raw materials, eager to receive OPEC aid.

III. ARE WE IN A NEW WORLD ECONOMY?

The problems we have faced in the first half of the 1970's suggest that the world economy has changed radically. We are in a new

^d Their combined balance-of-payments deficit is expected to be a huge \$30 billion in 1975.

^e Hollis Chenery, "Restructuring the World Economy," *Foreign Affairs*, January 1975, p. 254. If the price of oil rises no faster than the general level of prices, the percent of world income being transferred will decline as gross national products rise.

world, with new problems. The old economic system is dead. A new one is waiting to be born.

It is normal for almost every speech writer to make such observations regardless of the date and the situation. To what degree are these clichés correct?

A. *Current Trends*: One thing is clear. The problems we face today, and have faced in the past few years, are as massive as they are unprecedented:

At no time in recent history has inflation been so rapid and widespread among the industrial countries as it was in 1973–74. Even today it is excessive.

Similarly, at no time since the Great Depression has unemployment been so high and widespread among the industrial countries as it has been since 1974.

A combination of hyperinflation and economic recession is also rare. Inflation usually goes with full employment; unemployment is usually accompanied by deflation. Few economists predicted the perverse constellation of events of the past three years.

International deficits for the industrial nations as a group is a new phenomenon. Normally, industrial countries run surpluses—the deficits of some being more than offset by the surpluses of others. In this manner real resources in the form of foreign aid or foreign investment are transferred to the developing countries. Since 1974 the situation has been reversed.

B. *Long-Run Trends*: In addition to these new phenomena, a number of other developments have been at work changing the world.

1. *The world economy has become more and more integrated, more and more interdependent.* This trend is likely to persist as world trade continues to grow almost twice as fast as world production and as international investment flows grow at a much faster rate than domestic capital formation. This was the experience of the past third of this century.

The result has been an unprecedented high and sustained rate of world economic growth, with the fruits of this growth widely shared around the world.

However, as the energy crisis and the world inflation and recession of 1973–74 dramatized, the growth of interdependence has raised a number of problems and has cost nations a large degree of control over their economic life.

These problems may be avoided or mitigated by sound national economic policies plus international consultation and action. Such action would preserve and enhance the benefits of economic integration, avoiding a retreat to the self-defeating policies of the 1930's. Unfortunately, national governments and existing international institutions are not yet able to cope efficiently with the high degree of international interdependence the world has achieved. The major immediate need is for the industrial powers to achieve full employment without undue inflation. If this is done, the international economic problems can be resolved at a leisurely pace.

2. *The Bretton Woods Agreement of 1944 has broken down.*

“The United States formally terminated the Bretton Woods system in part because both we and other countries had become increasingly

dissatisfied with our special role: other nations wanted to curb the United States freedom to print international money, [run persistent balance-of-payments deficits] while the United States wanted the freedom to control its own exchange rate.”^f

Thus, in August 1971, the United States cut the official link of the dollar to gold and the Bretton Woods system of fixed exchange rates was dead.

In its place is a mixed exchange rate system. The currencies of a number, but not all, European Common Market countries are linked in a “snake.” The yen is floating, but the float is heavily managed. The British pound and Italian lire are floating, but with less management. The dollar is floating with little management. Other currencies are pegged to the dollar or Special Drawing Rights (SDR).^g

The shift from the fixed or stable exchange rate system to the current mixed floating regime was necessary to eliminate the overvaluation of the dollar and U.S. balance-of-payments deficits which has persisted since 1949. Moreover, some welcomed more flexible exchange rates as a means of reducing interdependence, of returning to national governments an increased degree of control over their economic life.

The degree of independence actually achieved is questionable. Just as it takes two to tango, it takes two to have an exchange rate, and, as noted above, few governments are willing to let the private market determine the price for something as important as the exchange rate. Moreover, even with floating rates the world economy remains highly interdependent, as events since 1973 have dramatized.

3. *There has been a decline in the economic dominance of the United States:*^h

The U.S. share of world GNP has fallen from 39 percent in 1950 to 27 percent in 1974.

The U.S. share of world exports has fallen from 16 percent in 1950 to 12 percent in 1974.

The U.S. share of international monetary reserves has plummeted, partly by design, from 50 percent in 1950 to 7 percent in 1974.

Over the same period, the U.S. share of motor vehicle production has gone from 76 to 31 percent; of steel, from 46 to 20 percent; and U.S. consumption of industrial raw materials, from 42 to 27 percent.

What this means for U.S. economic leadership will be considered later.

4. *Finally, abject poverty persists for most of the world's people and, what is relatively new, they are attempting to do something about this through an international redistribution of world income and power.* The economic outlook for the poorest countries, as noted earlier, is even bleaker than it has been. In part the result has been to intensify efforts to get more from the rich countries in terms of aid, finance and trade concessions, arguing that the basic reason for their poverty is exploitation by the rich countries.

Clearly, the world economic scene has changed. The question for those of us who work in Washington is what the changes mean for government policy. I will deal with this in the third part of the

^f Marina v. N. Whitman, “Leadership Without Hegemony,” *Foreign Policy*, No. 20, Fall 1975, p. 151.

^g Robert Solomon, “On the Past and Future of the International Monetary System,” *Federal Reserve System*, Oct. 2, 1975.

^h Data are from Marina v. N. Whitman, op. cit., p. 141.

paper. But first I would like to raise, but not answer, several analytical questions.

C. *Open Analytical Questions:*

1. *Are we in the "Age of Inflation"?*

In the early 1950s, *The Economist* of London ran a series of articles under the general heading the Age of Inflation. The weekly argued that we were in it. They were at least a quarter of a century early.

The major argument was that the commitment of modern governments to full employment and programs to redistribute income would necessarily feed inflation. *The Economist* also argued that trade unions, better organized than in the past, would continue to press for a larger share of the pie. This, too, would contribute to inflationary pressures.

There is no question that the forecast of *The Economist* has been realized since 1973. And, factors which *The Economist* had not anticipated were also contributing to inflation.

The question now is whether the world has reached a new situation, with economies much more sensitive to inflation than they were in the past; whether, in the jargon of professional economists, the Phillips Curve has shifted to the right so that the trade-off between unemployment and inflation takes place at a higher level of unemployment than before.

My own view is that very special circumstances combined to give us the double-digit inflation of 1973-74 and that it would be a mistake to project present trends very far into the future.

2. *Have business cycles in the industrial countries become more synchronized so that we are doomed to bigger booms and deeper dips in economic activity?*

Chase Econometrics thinks that this is the case, that the past 25 years have been an aberration. The increased integration of the world economy, the rapid international transmission of economic developments means that inflation and waves of expansion plus deflation and recession will move together in the major industrial nations. The result will be economic swings of greater amplitude than in the past.

Again, I am skeptical of the projection of current experience into the future. This may be fine for a long-run weather forecast—three days—but not for a long run-economic forecast which ought to be valid for several years.

The crucial issue is government policy. It won't always be wrong. (I am sure of that.) And, it won't always be the same, country to country, despite the high frequency of international meetings to coordinate policies. We can see the difficulties of coordinating policies of the legislative and executive branches in one country we know well.

3. *Does the smaller economic clout of the United States—measured in terms of share of GNP, international trade, investment, and monetary reserves—mean that U.S. influence in world affairs has diminished proportionately?*

The answer to this, for me at least, is clearly "no." While the economic balance of power among the industrial nations is markedly less unequal than it was in the early post-war period, the United States is, and for the foreseeable future will remain, the dominant national economic force. It will continue to be the only economic superpower.

The world's second economy (outside of the U.S.S.R.) is Japan. It accounts for some 8 or 9 percent of gross world product. This com-

pared to over one-quarter, or three times as much, for the United States.

The European Community will, of course, be a major economic force. Yet, it is not, and will not soon become the equal of the United States even though its combined GNPs approach that of the United States. The European Community is far from being a nation. As a practical, if not legal, matter, on any important issue unanimity of the nine member countries is required. And, on many important economic issues the Community is seriously divided. The only nation which has the resources and, at times at least, the political will and organisation to lead is the United States. It cannot abandon its postwar role though it may want to alter its style.

Finally, despite the decline in U.S. relative economic strength, the role of the dollar has increased and it remains the single most important currency for private and official transactions. In a very real sense the United States is the world's central banker.

4. *Is a world shortage of capital on the horizon?*

The quantum jump in the cost of energy has highlighted the need for large-scale investment in new energy sources as well as new low-energy consuming facilities of all sorts. Capital requirements for pollution abatement equipment, housing and mass transport are huge. And, there are shortages of capacity in many raw material processing industries.

These factors, plus a fear that savings rates are falling, has led to a concern about a shortage of capital in the future. The president of Chase Manhattan Bank has observed that the industrialized countries face a capital shortfall of \$3 trillion over the next ten years.¹ A Brookings study is less alarmist. It notes "we can afford the future, but just barely."²

I have no views on the subject. Indeed, I am not even sure how to define the problem of "shortage." But, as an old weather forecaster, I am skeptical of all long-range forecasts. So, let me go on to the easier questions—questions of public policy.

IV. MAJOR POLICY PROBLEMS

In very broad terms the world faces three major economic problems:

First, how to make the world economy more efficient, more productive, to meet the needs of an expanding population at the lowest cost in terms of both human and natural resources.

Second, how to make the world economic system more equitable, to meet at least the minimum needs of people everywhere.

Third, how to meet the persistent desire for national sovereignty in an increasingly interdependent world.

The first two problems are no different from those faced by each national government in formulating domestic economic policy. Arthur Okun, now at Brookings, treated this subject for the United States in a provocative book called "Equality and Efficiency: The Big Trade-off." I take my cue from him.

¹ *Washington Post*, Oct. 25, 1975.

² "Capital Needs in the Seventies" by Barry Bosworth, James Dusenberry, Andrew S. Carron, Brookings Institution, 1975.

The third problem (similar to the issue of states' rights in U.S. history) is a difficult one of how to maintain a nation's sovereignty over its economic affairs without halting or reversing the trend toward greater international economic integration.

A. *World Efficiency: Managing the International Economic System.*

The increased productivity of the world economy since the end of World War II has been remarkable. As noted earlier, this has been a period of unprecedented rapid economic growth.

This achievement has been the result of a number of forces—science and technology, business, and the economic policies of governments.

Perhaps the leading factor in world economic growth has been the rapid expansion of international trade and investment. International economic activity has been the leading sector in the growth of the world economy and its increased productivity. World trade has grown almost twice as fast as production;^k foreign direct investment has grown very much faster than total investment.

Behind these results have been two sets of government policies:

Governments have accepted Keynesian doctrine that they are responsible for maintaining full employment, and that expansionary fiscal policies are adequate to accomplish this.

Governments have followed liberal, or free-market, international economic policies, reducing barriers to world trade and investment. This has made the world economy more productive. The nationalistic, beggar-my-neighbor policies of the thirties, responsible for spreading and deepening the Depression, have been avoided.

More can be done to increase the productivity of the world economy. This involves continuing, if not finishing, the task of reducing artificial barriers (and inducements) to trade and investment, improving the functioning of the international monetary system and developing new instruments to deal with a highly interdependent world.

1. *Trade*: The arguments for freed world trade are well known:

The U.S. economy can concentrate on producing those goods which it can make more efficiently and importing those which foreigners can produce better. We gain in real income.

Jobs which may be lost through increased imports are offset by jobs created through increased exports. Moreover, wages in U.S. export industries are higher than wages in import-competing industries so that labor as a whole gains through freer trade. Finally, for those whose jobs are threatened by increased imports—and in a dynamic economy such jobs are very few in number—either temporary import restrictions or special adjustment assistance are available to help.

More generally, foreign trade has an impact on our economy comparable to investment in machinery or improvement in technology. Foreign trade raises U.S. productivity by permitting U.S. labor and capital to shift from industries with low returns to those with higher returns. We import those goods which can be produced more cheaply abroad, freeing our own capital and workers to produce goods or services we can provide more efficiently.

This increase in productivity may at times cause temporary unemployment—much as the installation of a new machine or a new product

^k Between 1953 and 1973 the volume of world trade grew by 8 percent per year and real world output grew by 5 percent per year.

may create temporary unemployment—but it need not be a sufficient reason for restricting imports. We would not try to prevent the introduction of new machinery which displaces coal miners. We would meet the problems of unemployment directly. By analogy, a comparable policy might well be followed in the case of imports.

Freer trade is an important element in U.S. foreign policy. Any large-scale retrogression would be seen as a return to the economic nationalism of the 1930's. It would end more than a quarter of a century of cooperation among the nations of the world. We would have gone back to the self-defeating economic policies which characterized the 1930's and contributed to the economic and political disasters of that unhappy period.

If we fail to move forward on trade—indeed, if we only stand still—we shall necessarily slide backward. The expansion of the European Common Market from six to nine nations in 1974 and its extension of preferential trade agreements to some 50 other nations have created the largest trading bloc in the world. Despite “compensation” in the form of reduced Common Market duties, the expansion of the Common Market and the preferential trade arrangements will necessarily put U.S. exporters at an increased competitive disadvantage. The only practical way to avoid such retrogression is to reduce barriers to world trade.

Lower import restrictions would reduce inflationary pressures. Inflation is now a major threat to all nations. It will not be easy to bring under control. Eliminating barriers to foreign goods, and improving the efficiency of our economy, has a role to play in the fight against inflation.

Finally, as we move into a period when inflation and access to supplies—rather than markets—become major concerns, the world will need to work out rules dealing with restraints on exports. Much of the U.S. inflation of 1973 came from expanded U.S. exports and from limitations on the supply of imported oil and other commodities. The future may well see governments increasingly trying to gain economic and political advantages for themselves through control over their exports. There is need for more effective international rules on export controls. General negotiations on trade provide an appropriate forum to deal with this matter.

One of the most difficult problems in the current trade negotiations, as in all the previous ones, is agriculture, particularly the Common Agricultural Policy (CAP) of the European Community (EC). A number of factors suggest that the problem may be less intractable today:

Prices of most farm produce are very high.

For many products the EC imposes levies on agricultural exports rather than supporting them by subsidies.

The demand for reforming the CAP is steadily becoming stronger within the Common Market.

Nevertheless, agriculture remains one of the toughest problems for the trade negotiations.

2. International Monetary Reform: The function of the international monetary system, and the uncountable number of blueprints for its reform, is to facilitate the expansion of world trade and invest-

ment. The facts suggest that the unreformed system, or at least the unplanned reforms, have worked very well. Much has been achieved through the pressure of events, rather than as part of a grand design. While more remains to be done, it is now clear that there will be no blueprint such as appeared at Bretton Woods in 1944. Rather the system will continue to evolve to meet new challenges. What has been achieved? What remains to be done?

One thing that was achieved by conscious design was the creation, in 1969, of a reserve asset, Special Drawing Rights (SDRs), to provide a managed, international money. The expectation was that SDRs would eventually replace gold and dollars as the center of the world's monetary system.

Some \$10 billion of SDRs were created from 1970 through 1972. None has been created since, and there is little prospect that more will be created in the foreseeable future. Gold and national currencies, particularly the dollar, continue to be the major source of international monetary reserves.

During the period when \$10 billion of SDRs were being created on the hypothesis that that amount would adequately meet the world's need for increased reserves, some \$72 billion of other reserves, in foreign currencies, were also being created. This was excessive. Some observers put part of the blame for the subsequent world-wide economic boom and hyper-inflation on this monetary expansion (though other factors are sufficient to account for these phenomena).

International reserves are needed to give countries time to adjust their economies to changing world economic conditions. If a country had to adjust immediately, for example, to a balance-of-payments deficit, the costs to the country and to others could be high. Thus, reserves are needed.

But, the multiplicity of reserves other than SDRs—gold, dollars, and other currencies—and the lack of international control over their creation can be a problem. There are a variety of proposals to phase out gold and currencies as reserve assets and to substitute SDRs.¹

However, many countries are addicted to gold. And, more important, the strength and availability of the dollar, for both official and private transactions, makes it a more flexible reserve asset than SDRs seem likely to be. As Marina Whitman says,

“... there remains no acceptable alternative to the dollar in all its special functions, and efforts to achieve symmetry [of the dollar with other currencies] of rights and obligations in the reformed international monetary system should not be pushed so far as to deprive the world of the benefits of an international money.”^m

In the world of fairly fixed exchange rates of the 1950's and '60s, correction of imbalances in international trade and payments was frequently difficult and costly in both economic and political terms. At times such corrections, or adjustments, were achieved through inflation, unemployment or restrictions on trade and capital movements. The adoption of more flexible exchange rates in the 1970's, however, gave governments another instrument to correct actual and potential imbalances in their payments and to do so without the trauma of the earlier periods.

¹ This could be done through a consolidation account in the International Monetary Fund which would exchange gold and currencies held in official reserves for SDRs. This will not be as simple an economic or political matter as the description may suggest.

^m *Op. Cit.*, p. 155.

The achievement of more flexible exchange rates was less by design—unlike the highly-negotiated creation of SDRs—but more the result of the economic pressures of large imbalances in international payments, notably the persistent U.S. deficit and Japanese surplus. The accidental system has worked quite well especially in riding out the “energy shock” and hyper-inflation of 1973–74.

But, the wide swings in exchange rates seem undesirable and may be disruptive. Moreover, with most governments intervening to influence their rate of exchange there is need for close consultation and cooperation among the major industrial powers at least to make sure they are not working at cross purposes in their exchange rate policies.

The subjects for consultation go well beyond exchange rate management. The domestic economic policies of the major countries is a matter of concern to all.

B. The Provision of Equity in the International Economic System.

Attempts to introduce a large degree of equity into the international system—to transfer real resources to the poor countries of the world by means other than the normal market mechanism—are very recent. This is not surprising. The notion of equity even within national economies does not have a long history.

Outside of the introduction of the progressive income tax in the United States in the 1920's, U.S. programs to increase equity (or redistribute income) had to await the Depression of the 1930's and pressures from the newly formed industrial trade unions and the army of unemployed.

Today, equity is as much a concern of the U.S. Government, and, indeed, all the governments of the industrial countries, as is economic efficiency. Current debates over taxes and the price of domestic oil are examples of cases where equity considerations equal, if not outweigh, considerations of efficiency. And, a variety of governmental measures redistribute income within countries.

Outside of the impact of OPEC, no major redistribution of income has been occurring among nations. But the pressure for an improved distribution of income among nations is strong and growing. This was made clear at the September 1975 meeting of the Seventh Special Session of the U.N. General Assembly.ⁿ

The United States and the other affluent nations had been on a collision course over economic philosophy with the poor countries for over a decade. The United States has been advocating measures designed to increase the productivity of the world economy, to increase the size of the pie. The developing countries, on the other hand, have been more interested in how the pie is divided among nations. A collision was averted at the September 1975 meetings of the Seventh Special Session of the U.N. General Assembly. Indeed, the meeting ended with a general euphoria about what was agreed.

This is likely to be short-lived. The poor countries will find that there is less in the agreement than meets the eye. Moreover, they will continue to be poor and we rich so that the process of constant bargaining and negotiation with them over the division of world income will continue.

ⁿ It important to note that the demand of the developing countries is for a redistribution of income among countries, not among people. Most developing countries have a much poorer distribution of income within their country than does the United States and the other industrial countries.

The essential question is how the dialogue is conducted—with respect and good faith, with a spirit of constructive debate and compromise, or as antagonists, as part of a bitter class struggle. Each country faces the same problem in its domestic debate over economic policy.

In their attempt to achieve price stability for their exports, the developing countries have challenged the U.S. claim that free markets are efficient, that the best economic results will be obtained by leaving production, pricing and distribution of commodities to the competitive forces of supply and demand.

Free competition does not now exist in many commodities. Most governments interfere in the market for agricultural products. Most mineral markets are dominated by a few companies; consequently, the intensity of competition is open to question. Furthermore, a free market solution, even if it existed, may not be the best from the point of view of efficiency. The fact that there have been wide swings in both commodity prices and output suggests that much economic waste must be involved. There is reason to believe that market prices do not correctly reflect the scarcity value of non-renewable resources such as oil or other minerals.^o

Such economic arguments, plus arguments based on equity and charges of exploitation form the basis of the LDC demands for reform of the international economic system. And the system is, slowly, being reformed. One can probably date its beginnings to Point Four of Truman's Inaugural address of 1949. This was an attempt by the United States to assist the poor countries of the world with a small program of technical aid. A year earlier the United States had started a massive program of economic aid for Western Europe, the Marshall Plan.

There were three original motivations for U.S. aid—humanitarian concern about the relief of poverty; economic concern about building markets and protecting U.S. investments abroad; and a concern about keeping these nations friendly to the United States and out of the camp of the Soviet Bloc.

By the mid-1950s, with European recovery achieved, the bulk of U.S. aid shifted to developing countries, especially those on the periphery of the Communist bloc. The amounts involved, however, were less than one percent of U.S. GNP, compared to 2 percent or more in the early days of aid to Western Europe.

In 1960, the United States took the initiative to form the Development Assistance Committee (DAC)^p of the OECD. Its initial function was to pressure the European countries to increase their aid to the poor countries of the world. Our objectives were not completely selfless. Indeed, the primary motivation was to improve the U.S. balance of payments.

Through the 1940's and 1950's, the developing countries were passive. They took what was offered them. They made no demands on the affluent nations.

This changed more than a decade ago. In 1964, the developing countries got together in the United Nations Conference on Trade and Development (UNCTAD) to set out their program for assistance.

^o Lawrence B. Krause, Statement before Subcommittee on International Organisations, Committee on International Relations, House of Representatives, May 19, 1975.

^p In 1960, the organisation was called the Development Assistance Group. It did not become DAC until 1961.

They asked for commodity agreements with price support and price stabilization programs, preferential access for exports of manufactured and semi-manufactured goods^a and foreign aid (official aid plus private investment) equal to one percent of the GNP of the donor countries.^r

Over the years, this program has not changed much. Some new items have been added. Most important were proposals to make foreign aid automatic, notably by linking SDR creation and distribution to foreign aid, and to index the prices received by primary producers for their exports to the price of their imports (but only when import prices rose). There were also complaints about how the multinational corporations were exploiting the poor countries and insistence that the companies should be controlled, if not expropriated with impunity, by the developing countries.

But it is not only the substance of the demands of the developing countries which has grown. As important is the style and the aggressiveness with which their program has been advanced.

The developing countries seem to have feasted on the success of OPEC. As a result of this heady wine, plus frustration with lack of progress elsewhere, the language of the speeches and the various documents adopted by the United Nations General Assembly—notably, the program for a New International Economic Order and the Charter on the Economic Rights and Duties of States—has become especially abrasive and confrontational.

The major thing that happened in September in New York at the United Nations was not so much the building of a New International Economic Order, as the developing countries had demanded, but the movement of the United States from a position of stonewalling to one of negotiation. This is a major new development.

The concessions made by the United States and the other affluent countries to the developing countries were not important but not overwhelming. Basically, U.S. policy has not changed, but, its style has. The latter is what made the UN meeting a success and allowed the developing countries to leave with a feeling of accomplishment.

There will be limited transfer of real resources to the developing countries as a result of the September U.N. agreement.^s This will come about largely through the enlargement of an existing IMF program to finance short-falls in export earnings. The new financing will be on concessional terms and some of it will be given to the poorest countries as outright grants.

The agreement to lower barriers to exports from the poor countries can make an important contribution to them; work on this has been underway for some time in Geneva.

The United States agreed to talk about commodity agreements designed to stabilize, if not keep high, the prices of primary products of interest to the poor countries, despite our feelings that most such agreements are undesirable and unnegotiable. However, the United States would not accept the idea of indexation.

^a They also asked for preferential arrangements among the developing countries similar to what the European Common Market had achieved but less than would be required by the full-scale application of the General Agreement on Tariffs and Trade (GATT).

^r The one-percent target had been proposed by the Council of Churches in 1958 and adopted by the U.N. General Assembly in 1960 and again in the fall of 1970.

^s Much of the substantive reforms were going ahead in other forums—the liberalizations of compensatory finance in the IMF, the reduction of trade barriers in GATT negotiations.

In short, the United States agreed to a program of income maintenance rather than one of price maintenance for the developing countries—the United States is prepared to finance a shortfall in total export earnings but it is not prepared to maintain the unit prices of primary products, as the developing countries had requested.

The United States did not agree on a formula (0.7 percent of GNP) for official foreign aid,¹ opposed using SDRs as aid, but did agree to support measures to increase the flow of private capital to poor countries. And, the final resolution made no mention of developing a code for the transnational corporation, though this had been a major demand of the developing countries.

There are good reasons why the United States should continue to be cautious in accepting the demands of the developing countries. If adopted, some of the demands would be counterproductive. And, the United States must not accept blame for the poverty of the developing countries. They claim that the rich countries are exploiting them and that this explains why the rich are rich and the poor are poor. While there may be an element of truth in the charge, by and large it is an erroneous and harmful thesis.

The major problems that developing countries have to resolve are domestic problems. International economic policies can assist in solving some of their problems. But the real problems are domestic, not foreign. Focusing on foreign problems diverts attention from the main defects, the main causes of poverty in a developing country.

There are, however, good reasons why the United States should accommodate its policies to some of the demands of the developing countries. Perhaps most important, is the simple matter of morality. The United States cannot opt out of the world community. Poverty in Bangladesh is less obvious than poverty in Washington, D.C., but it exists in both places and human compassion does not recognize national boundaries.

Prudence is also involved. There is much to be said for “taking out low-cost insurance to guard against possible catastrophic events.”² A world in which the hopes of a large number of people are constantly frustrated by economic conditions would be a world of political instability. Even if the United States and the other affluent countries could have only a marginal impact on poverty, failure to act, failure to show compassion, would run the risk of causing disruption.

There are various possibilities for disruption. India now has a nuclear bomb. Others may soon have. Would they use it in future “wars of redistribution of income”? More immediately, the developing countries are trying to form “little OPECs” for their exports as OPEC has done for oil. They would probably not be successful. Nevertheless, considerable disruption could be caused by their efforts.

As world economic growth resumes, the United States and the rest of the developed world will have to depend more and more on imported materials. In a world of political instability, of anti-Western-

¹ The one-percent target included private investment. U.S. official aid (excluding private investment) has declined from 2.79 percent of GNP in the early days of the Marshall Plan; to 0.53 percent in 1960; 0.31 percent in 1970; and 0.25 percent in 1974. More seriously, U.S. official aid has been stagnant or declining in real terms since the early 1960's—from \$3.6 billion in 1963, it fell to \$3.0 billion in 1973 while prices rose by over 40 percent.

² Testimony of Edward Fried of the Brookings Institution before the Senate Committee on Foreign Relations, June 3, 1975.

ism, of anti-capitalism, of internal strife abroad, the needed investment for these supplies will not be forthcoming. We will find ourselves more and more with shortages of basic raw materials.

Aid and related measures can act as a solvent for tensions between the two worlds. In so doing it can help make the world more livable and meet the biblical injunction on the rich to help the poor.

C. The Limits of Sovereignty in an Interdependent World.

As discussed earlier, one of the major factors contributing to the remarkable expansion of world economic growth in the post-war period has been the willingness of the major countries to limit their sovereignty. They have:

Restricted their right to impose restrictions on trade and payments through the General Agreements on Tariffs and Trade (GATT) and the International Monetary Fund (IMF).

Taxed themselves to provide financing for the economic development of poor countries through the World Bank, related institutions and bilateral arrangements.

Taxed themselves to provide financing to meet the needs of any country running into temporary balance-of-payments problems.

Altered their domestic economic policies to take account of problems of other countries as the result of consultations in the Organisation for Economic Cooperation and Development (OECD), the IMF and special ad hoc consultative groups.

These limitations on national sovereignty have benefited each country singly and the world in general. The results are clear.

However, nations are not willing to abandon completely national sovereignty to international rules or to international organizations. Thus, each of the agreements and institutions which have been established are flexible, providing room for some exercise of national sovereignty. More specifically:

Limitations on the use of trade restrictions may be set aside for a temporary period, under GATT, to take account of special problems a country may face as the result of increased imports.

Flexible exchange rates were designed to provide greater freedom of national policies, especially monetary policies. While complete freedom is not attainable in this interdependent world, the new exchange rate system has eased pressure on governments to resolve their balance-of-payments problems by domestic measures, for example, deflation and unemployment for a country with a balance-of-payments deficit. The rules for exchange rate management are general guidelines for intervention, rather than a specific code with little leeway for national discretion.

Aid is provided to developing countries but the affluent have either refused to accept an automatic formula or have not implemented the formula adopted by the United Nations.

Finally, while the major governments meet together regularly in the OECD, as well as in the IMF and other forums to "coordinate" economic policies, the "coordination" remains primarily a discussion of the economic outlook and policy intentions of the major countries, occasionally with suggestions as to how the more "delinquent" countries should act, rather than an attempt to "legislate" the domestic economic policies which a country ought to follow.

AGRICULTURAL OUTLOOK

WORLD AGRICULTURAL SITUATION AND OUTLOOK

[By Richard E. Bell, Assistant Secretary of Agriculture for International Affairs and Commodity Programs, USDA]

A year ago yesterday the World Food Conference adjourned in Rome amid concern of food shortages in many parts of the developing world. Crop failures in 1974/75 in parts of South Asia—particularly in India and Bangladesh—and the aftereffects of prolonged drought in the Sahel contributed to that concern. Grain crops in the major grain-exporting countries—especially in the United States—were reduced by poor weather, disappointing hopes of rebuilding world grain stocks which had fallen to low levels.

USDA's agricultural production indices for 1975 will not be published until early next month, but world grain prospects suggest a substantial improvement in the world food situation, although problems remain.

World grain production (wheat, coarse grains, and milled rice) is now expected to total about 1,173 million metric tons in 1975/76, about 2 percent above last year.

Grain production in the developing countries—thanks to record totals for wheat, rice, and coarse grains—is expected to be a full 5 percent higher than in any previous year. This would reverse a 4-year deterioration in per capita grain output in those countries and result in a level of per capita output about equal to that in 1973/74, but fall below the levels achieved during the 3 years of extended good weather from 1969/70 to 1971/72. Population in the developing countries in the intervening years since 1970/71 has grown over 13 percent, accounting for the lack of any growth and even deterioration in per capita production levels in some countries. These countries still need to import substantial amounts of food this year, and have had little opportunity to stockpile against possible future shortfalls.

The major grain production shortfalls this year are in the Soviet Union (down 36 million tons from last year), Eastern Europe (down 4 million), and Western Europe (down 10 million tons) and are concentrated in wheat and coarse grains. If these areas are excluded, grain output in the rest of the world is up about 75 million tons in 1975/76. Total grain production in the United States in 1975 will be over 250 million tons, compared with 205 million tons last year, permitting some expanded domestic use, larger exports to meet most of the above shortfalls and increased food-aid commitments, and at least a modest increase in U.S. carryover stocks. Increased output by the other major

grain exporting countries is forecast to offset some 11 million additional tons of the shortfalls.

World wheat production is forecast at about 349 million tons, unchanged from last year's level. *World coarse grain production* is expected to be up about 4 percent to 592 million tons. Outside the Soviet Union and Eastern and Western Europe where the poor crops were concentrated, wheat and coarse grain output rebounded sharply from last year, with coarse grains hitting a new record.

World rice production (milled) is expected to reach a new high of 232 million tons, 4 percent above last year. The monsoon rains have been very favorable to the Asian rice crop. Rice production in the People's Republic of China will likely equal or exceed last season's record 80 million tons. Output in South Asia should be up some 7 percent from last year's poor weather crop, with substantial increases in Pakistan, Bangladesh, and India. Both East Asia and Southeast Asia's crops should also increase, but not as much. Thailand is forecast to harvest a record 10 million tons, and the winding down of armed conflict in Indochina may bring some recovery in output. For all of Asia (including communist Asia), production is expected to be up some 3.5 percent. In the United States, the world's leading rice exporter which normally exports over 50 percent of production, a record crop 9 percent above the 1974 record is in prospect. Dampened demand for imported rice in Asia may be offset some by larger sales induced by lower prices, buoyant Middle Eastern demand, and the desire for some rebuilding of stocks which are still low.

With much of the 1975 season world grain crop already harvested, the *consumption and feed usage* situation becomes the chief areas of remaining uncertainty for the 1975/76 world grain balance. Currently, utilization estimates for grain still show a moderate increase for 1975/76 over 1974/75. These estimates take account of unfavorable general economic conditions in many industrialized countries and associated declines in consumers' real disposable income—particularly that available for food—which have tended to interrupt the long-term worldwide uptrend in consumption of fed livestock products. Should such unfavorable demand conditions continue, even this modest increase may not occur. Until 1974/75—when world grain utilization was unchanged from the previous year—the average annual growth increment experienced in recent years was 12 to 15 million tons.

World trade flows in grain are expected to reach a record level of nearly 140 million tons in the current July–June season, and this excludes trade between members of the European Community, which will probably be another 14 million tons. The 140-million level compares with 125 last year and a previous record of 130 in 1973/74. The production shortfall in the USSR is the main factor in this high trade level. Short crops in Western Europe are being offset at least to some extent by drawing upon large stocks which were accumulated in the previous season. From the standpoint of supplying countries, most of this increased trade flow is being met by the United States. There may be a modest increase in shipments by other major exporting countries, but this is more than offset by reductions in shipments from other areas, including even the USSR, who's normal exports to East Europe and to other countries will be sharply cut back in 1975/76.

World grain stocks are expected to decline only marginally from the 103-ton level at the beginning of 1975/76. Forecast stock increases in

the United States are likely to be offset by decreases elsewhere. This means that in 1976/77 we will again be acutely conscious of weather and crop developments around the world.

World production of oilseeds is expected to be up substantially in 1975 thanks largely to gains for soybeans in the United States and Brazil. The production increase is equivalent to a 9-percent increase in oilseed meal output and a 7-percent rise in vegetable oil. Sunflower production is down in the Soviet Union. The final estimate could amount to no more than 5.5 million tons, or only slightly above the 5-million ton crop of 1972. Canada registered gains in rapeseed output in 1975. Philippine coconut production should recover, and Malaysian palm oil output is also up. Expectations of limited recovery in the 1976 Peruvian anchovy catch will result in only a small gain in fish meal and oil available for export. The demand for meal and oil appears to be recovering in the major developed countries. In addition, the Soviet Union has contracted to import about 1.5 million tons of soybeans in 1975/76. Nevertheless, an additional buildup in world stocks of meal and oil is likely during 1976. Vegetable oil prices may weaken relative to meal prices because of an expected slower growth in demand for oil. In addition, marketing efforts by competing major foreign vegetable oil exporters—Malaysia (palm oil), the Philippines (copra and coconut oil), Brazil (soybean oil), Canada, (rapeseed oil), will continue to exert downward pressures on oil prices.

Meat production in the major importing areas of the world, North America, the European Community, and Japan, is expected to decline by about 3 percent in 1975 from record 1974 output. Most of the decline is expected to occur in the United States where reduced pork and poultry production will not be fully offset by larger beef and veal output. Parallel trends are expected in Canada, the European Community and Japan.

In 1975 net meat trade in these areas is expected to be about equal to abnormally low 1974 levels. The only difference being that a greater trade in pork is expected to offset reduced net trade for beef and poultry.

Production of beef and veal in the major exporting areas, namely, Oceanica, Central and South America is expected to exceed record 1973 levels this year despite restricted traditional import markets. The principal reasons for the production increase are larger herds and return to more normal slaughter offtakes following the withholding of large numbers of cattle on grass in 1974 in anticipation of future price recovery and improved market access. Most of the gains in production are moving into domestic disappearance as export volumes are expected to improve by only about 60,000 tons, carcass weight, in 1975.

World milk production is expected to reach about the same level this year as in 1974. Consumption will probably run a little below last year in most of the world except the United States. Large and increasing surpluses of nonfat dry milk will continue to be a serious problem for the major dairy producing countries—most notably the European Community—although their stocks are beginning to grow a little more slowly.

First estimates of 1975/76 world sugar production indicate a crop of about 83 million metric tons, approximately 5 percent higher than last

year's crop. The reason for the increase is expanded beet acreage in the United States and Europe. The USSR has a larger beet crop because of more favorable weather conditions than a year ago. Lower sugar prices are bringing some pickup in consumption which had been slowed by last year's unusually high prices. World sugar consumption is expected to run about 1 million tons below current output, allowing a small buildup in low sugar stocks.

World cotton production is expected to fall 8 percent in 1975/76 to about 58 million bales. Reduced U.S. production account for nearly half the decline, with other non-communist Northern Hemisphere cotton and textile exporting countries responsible for most of the remainder. Plantings there last spring were curtailed by last year's low cotton prices and high production costs. In contrast, production by communist countries is still forecast to at least equal last season's with the USSR perhaps equaling 1974's record output, but early cold weather in the USSR has made the situation there somewhat less certain.

Current production and near-record August 1 world carryover stocks of about 30 million bales will be more than adequate to meet an estimated nearly 3-million-bale increase in world cotton consumption to about 61 million bales. Most of the increased consumption will be distributed among the United States, other non-communist cotton exporting countries, and the large Far Eastern textile manufacturing countries. World stocks are expected to be worked down about 3 million bales by August 1, 1976, to a level that would still be the second highest since 1967.

Looking beyond the current crop year to 1975/76, an improved *world fertilizer situation* gives hope for a resumption of solid growth in agricultural production around the world. The prices of fertilizer moving in international trade declined substantially in 1975 from the high prices induced by shortages last year. Prices for phosphates fell substantially, partly reflecting an estimated 11-percent increase in production capacity, and also declined sharply for nitrogen where production capacity increased about 7 percent, slightly above the estimated increase in demand. Import demand was dampened by the existence of large stocks acquired by many countries last year at record prices. In many of them, particularly in the developing world, only marginal price cuts have been passed on to farmers. Those farmers have held back on their purchases, but the countries probably will not import much more fertilizer until stocks are reduced.

As fertilizer inventories are reduced, and as world economic conditions improve, increasing the derived demand for fertilizer, upward pressure on prices will be felt—particularly for nitrogen where a large jump in capacity is forecast sometime around 1976/77. But future fertilizer price increases, if they do occur, are expected to be temporary and much less severe than those in 1973 and 1974.

Feeding the world is a big job; there is no time for rest with population increasing so rapidly. It will take more than fertilizer alone to provide ample food supplies around the world. Governments and individuals must continue to work hard to provide farmers with the means and incentives for carrying out their jobs. This is just as true in the poorest countries of Asia as in the United States.

OUTLOOK FOR U.S. AGRICULTURAL TRADE

[By Brice K. Meeker, Assistant Administrator, Foreign Commodity Analysis,
Foreign Agricultural Service, USDA]

The past few years have been kind to those who speak on agricultural trade at this annual Outlook Conference. Every year since 1970, when U.S. agricultural exports turned upward after two years of decline, your speakers have been able to cite export gains and point to an even better year ahead.

For five straight years, through corn blight, bumper crops, short crops, oil shortages and world recession, U.S. farm exports have set new records. The once "magic" goal of \$10 billion in exports was left behind in fiscal year 1973. We crossed the \$20 billion mark in 1974, and increased the margin in 1975.

This year, I am pleased to report, should be no exception. We are forecasting that exports in fiscal 1976 will be about \$1 billion more than the record level of \$21.6 billion in 1975, reaching perhaps as high as \$22.7 billion.

Along with this export record, we expect another record surplus in U.S. agricultural trade. We look for a slight gain in agricultural imports, to \$10 billion, which will result in an agricultural trade surplus of \$12.7 billion compared with \$12 billion in fiscal 1975. This will be the third consecutive year in which agricultural trade has made a positive contribution of more than \$10 billion to this country's balance of trade.

The forecast of continued growth in agricultural exports is based in part on signs that the recession is beginning to bottom out in most developed countries, led by the United States, where overall economic performance in fiscal year 1976 should see a significant recovery in the real growth rate.

Prospects, and opinions, are mixed elsewhere. The consensus is that the direction is up; the question is how soon and how fast. The European Community, for example, is confident that recovery in the 9 already has begun, but the Organization for Economic Cooperation and Development is not optimistic. Japan appears to be bottoming out from its worst economic situation since World War II, but there are those who see no genuine rebound until after midyear 1976.

At the same time, a decline in imports has improved the trade and current account balances of the developed countries, which should provide an added stimulus to trade as economic conditions improve.

In contrast to last year, when higher prices resulted in increased value of total U.S. exports despite a rather significant reduction in volume, volume will carry the load this year, offsetting generally lower unit prices.

Shipments of the principal commodities—grains, oilseeds and products, cotton and tobacco—could go over 103 million metric tons. This would exceed last year's volume by about 19 million tons and be slightly above the record set in fiscal 1974.

In terms of destination, the big gain will be in sales to Eastern Europe and the Soviet Union, reflecting the effects of the very poor Soviet harvest and weather-reduced production in Eastern Europe itself.

Shipments to the Soviet Union, largely grain, are estimated at \$2.1 billion and to Eastern Europe at \$1.1 billion. This would be a combined gain of a little more than \$2 billion, more than enough to offset anticipated declines in value to Western Europe, Latin America and some other markets, including the People's Republic of China. With a probable record harvest and a tight situation in foreign exchange, the PRC will be negligible as a U.S. market this year. Smaller export increases are expected to North Africa, South, and Southeast and East Asia, and Japan.

Export volume to both Western Europe and Latin America is expected to hold up, with the value decline coming from lower prices.

Japan continues as the largest national market for U.S. agricultural exports, and we expect shipments this year to be slightly above last year's level of \$3.3 billion.

Before turning to the export picture by commodity, I feel I should mention the long-term U.S. grain sale agreement with the Soviet Union. It won't take effect until next October 1, but it is an important new development in U.S. agricultural trade, and one that seems to be quite widely misunderstood.

The agreement, you will recall, is for five years and commits the Soviet Union to buy a minimum of 6 million metric tons yearly of U.S. wheat and corn, and up to two million tons more without consultations between governments. There is an escape clause for the United States on the minimum commitment should total U.S. grain supplies fall below 225 million metric tons.

This agreement was not designed to set the pattern for trading U.S. grain with other countries, including those of Eastern Europe. Rather it was intended to meet the unique situation of a single nation—Russia—which has the capacity to violently disrupt world trade in grains.

The agreement does not limit the sale of U.S. corn and wheat to the Soviets, nor does it give them preference over other customers. It was put in place as a vehicle to permit a better U.S. assessment of minimum world import demand each year, and to try to avoid the wild market fluctuations that have been triggered by sudden Soviet buying in the past.

The agreement does not cover soybeans, grain sorghum, barley, oats or rye. It does not restrict trade in wheat and corn, requiring merely consultations between governments before the Soviets buy more than 8 million tons of U.S. wheat and corn in a given year.

Rather the agreement provides a framework for expanding trade in a growing market that consumes more grain in a year than any other market except the People's Republic of China.

Now, let's turn to the export outlook for the major commodities.

Wheat.—A record year for wheat trade is in prospect, with U.S. wheat exports for 1975/76 projected at the record level of 36.5 million metric tons, or 1.35 billion bushels. This would be about 15 percent more than the previous record of 31.8 million tons set in 1972/73, and would represent 52 percent of the world's wheat imports (excluding intra-EC trade).

World trade in wheat, from a crop that fell far short of early expectations, particularly in Europe and the Soviet Union, is projected at an all time high of 70 million tons. The principal factor in this is the projected increase in imports by the Soviet Union to 14 million tons from only 2.4 million tons last year. This far more than offsets reduced import needs in the People's Republic of China, which has had improved crops in 1975, and is expected to need only about 3 million tons of wheat imports compared with 5.7 million tons last year. Most of this wheat to the PRC will be supplied by Canada and Australia under existing agreements. The remainder, about 500,000 tons, will come from Argentina.

Feed Grains.—U.S. feed grain exports are projected to recover sharply in the current year, reflecting larger supplies from this year's record U.S. crop and increased world demand, once again largely from the Soviet Union. Total Soviet feed grain imports are expected to be about 13 million tons compared with 2.5 million tons last year. At the same time, little change is expected in the imports of Japan and Western Europe, the other two major markets.

We look for U.S. feed grain exports of about 43 million metric tons, one-fourth greater than last year, and just about the same as the record level reached in 1973/74. The U.S. share of the total market is expected to rise to about 63 percent from 57 percent last year.

Oilseeds and Products.—U.S. exports of soybeans and meal are expected to show gains in volume this year, but lower prices may trim combined export value of oilseeds and products to about \$4.3 billion. This would be 11 percent below last year's record level of \$4.9 billion. A key factor in this anticipated drop in value is the price influence of larger U.S. soybean supplies, which are up by 300 million bushels over last year, totaling 1.7 billion bushels.

On the plus side in the export picture are improved livestock/feed profitability ratios and prospects of improved economic conditions, which presage at least modest rates of recovery in foreign demand. In addition, reduced grain and oilseed crops in the European Community and the Soviet Union will add to demand.

On the negative side, we face keen competition from other producers in traditional U.S. markets for oilseeds and products. Sharp gains are expected in available supplies of soybeans from Brazil, palm oil from Malaysia, and coconut oil from the Philippines.

What it comes down to, is that despite the expected upturn in demand—domestic as well as foreign—and some increase in export volume, U.S. soybean stocks at the end of this season are likely to increase substantially from the 186 million bushels of September 1 this year.

Cotton.—Cotton remains a long way from full recovery from the 1974/75 world textile recession, according to current indications, and a sharp decline in world cotton production this season will do no more than offset a near-record carry-in.

However, demand for cotton *has* increased, as indicated by the improvement in world cotton prices by about 20 percent from the depressed lows of last December to March, and we expect a moderate upturn in world trade this season. Even so, significant demand recovery in many importing countries remains in the future.

As for U.S. cotton, a sustained rise in U.S. prices throughout the summer and early fall while foreign prices held steady, widened the gap between U.S. and foreign growths to as much as 10 cents per pound by early October. A weakening in U.S. spot and New York futures prices during the first half of October narrowed the gap somewhat, but U.S. quotations, though nominal, remain several cents above prices of foreign cottons.

In this situation, U.S. exports face strong competition. However, with a moderate rise in foreign demand and some reduction in world supplies, U.S. fiscal year 1976 exports are forecast at about 3.6 million bales. This is down from last year's level of 3.8 million bales, and the value of cotton exports could drop below the \$1 billion level of fiscal 1975.

Looking beyond the current year, there are reasonably good prospects for the volume and value of U.S. cotton exports to rise in fiscal 1977.

Livestock and Livestock Products.—Continued global difficulties in the livestock industry are expected to cause a reduction in U.S. exports in fiscal 1976 to around \$1.2 billion. This would be the third highest year on a value basis, but down 17 percent from last year's exports of \$1.44 billion.

The reduction will come mainly from lower volume and prices for tallow exports, lower volume for lard, lower prices for hides and skins, and fewer live animals shipped to foreign markets. Good demand for dairy breeding cattle will ease the decline in live animal exports somewhat.

On the brighter side, we expect a large increase in both volume and prices for pork shipments and a smaller, but notable, increase in exports of beef. Much of the pork and beef increase will go to Japan.

Variety meats are holding near last year's value level as lower volume is being offset by higher prices.

Dairy and Poultry.—Exports of poultry and poultry products are recovering well after last year's decline, and we look for a total of about \$165 million in fiscal 1976, compared with \$135 million in FY 1975.

The increase is being led by gains in the export of eggs and egg products, which were up 37 percent in the first three months of the fiscal year over the same period last year, and in poultry meat, which was up 31 percent during the period.

Exports of the wide range of other poultry items, such as chicken livers, soups and specialties, have lagged behind the rates for poultry meat and eggs.

The export gains are well distributed. The European Community and Singapore show large increases in imports of both poultry meat and eggs and Japan shows a very strong increase in processed eggs.

While exports of dairy products increased by 47 percent in the first quarter of fiscal 1976, we don't expect this to continue, and are fore-

casting total shipments to decline for the year—from \$141 million last year to about \$125 million this fiscal year.

This is based on the expectation of reduced exports of nonfat dry milk, which usually represent about half of the total dairy exports under concessional programs. If concessional exports of NFDM hold at last year's level, total exports could show an increase.

Shipments of some other items, such as processed milk products, particularly dietary supplements for infants, have been up substantially and this is likely to continue.

Fruits, Vegetables and Tree Nuts.—The value of U.S. exports of fruits, vegetables and tree nuts is expected to reach about \$1.3 billion, about 10 percent more than last year's level.

Prospects are good for increases in a wide range of commodities, but the major increases are likely to be in tree nuts. Almonds, a leading factor in horticultural exports, are expected to sustain the favorable level of the past few years, and, with a large California crop in the offing, walnuts should continue their upward export trend.

Although some temporary problems are anticipated in various markets, exports of fresh citrus, particularly grapefruit, should at least maintain last year's level of dollar earnings. Canned and dried fruits, and citrus juices are expected to show gains over a year earlier.

Tobacco.—We look for exports of U.S. unmanufactured tobacco to be down somewhat in volume in this fiscal year, but higher unit prices should push value to a record high. Volume is forecast to decline to 580 million pounds, export weight, from 604 million pounds last year. We expect value to rise from \$861 million last year to about \$900 million for the current year.

Stimulated by strong demand and firm prices, production and supplies of tobacco have been increasing worldwide. World flue-cured production is estimated to be up 8 percent in 1975 after an 11 percent gain in 1974. The United States has provided most of this gain, but substantial increases have come from other areas—most notably Brazil, South Korea and Thailand. Production of burley also has increased substantially—at the rate of about 5 percent a year since the early 1960s.

This stepped up production in other countries, and their improved export performance, together with rising U.S. prices and a more favorable balance in supply requirement levels in major world markets, indicate problems for the United States in maintaining the favorable tobacco export levels of recent years.

In summary, then, we have the prospect of another outstanding year in the export of U.S. agricultural products—another record. Whether we can continue to set new records in each succeeding year is beyond my crystal ball. However, I think the performance of the years just past indicates that under the stimulus of market demand we have reached a new plateau from which, if we can keep the markets open to a relatively free movement of trade, we can go on to new records in the years ahead.

U.S. AGRICULTURAL SITUATION AND OUTLOOK ¹

[By Rex F. Daly, Acting Outlook and Situation Officer, Economic Research Service, USDA]

The improved price and income outlook for agriculture is expected to extend well into 1976. A record 1975 crop is moving to market. Although the harvest of the big grain and soybean crops is creating transportation and storage problems, the temporary glut is due to the unusually rapid harvest of large, good quality crops. Much of the price impact of these larger crops will be offset by a greatly expanded world demand. Accordingly, farmers' receipts in 1975/76 for the larger crop are expected to increase modestly as stronger demand maintains average crop prices only moderately below a year earlier. With livestock product prices running well above a year ago due to reduced supplies, return to farmers through mid-1976 are expected to hold around recently improved rates and well above the 1974/75 marketing year. At the same time, bumper crops and the beginning upturn in livestock production will continue to slow the rise in retail food prices.

While the outlook for agriculture for the second half of this year and for the 1975/76 marketing year is optimistic, there are uncertainties in the picture. The pace of the initiated recovery in livestock production will depend to a considerable extent on development in foreign markets and their impact on the supply and cost of feed.

Larger feed supplies and easier prices give added impetus to the turnaround in livestock production. Still, it may be next summer before we can expect much increase in production of meats, especially pork. As a result, supplies of livestock products, even though improving, will continue relatively tight.

In the general economy, rising energy costs and continued inflation operate to limit gains in consumer buying power as well as bring further, but hopefully slower, increases in farm production costs.

MARKETS FOR AGRICULTURAL PRODUCTS

In most recent years the domestic market has absorbed about 80 percent of total farm production. Farm products, mostly from U.S. farms, provide the food and the material inputs for beverages, tobacco, clothing and textiles, leather goods, soaps, paints and other consumer products. These products of the broad agricultural industry account for a substantial part of total consumer expenditures for goods and services.

¹ This paper was developed with extensive assistance from the Outlook Staff of the Economic Research Service.

The economic recovery now underway is expected to continue in 1976 and support an expansion in domestic demand for food, textiles and other consumer goods. Also the upturn in livestock production will expand domestic use of feed grains.

During 1975 the income tax reduction, unemployment compensation and other Government programs bolstered consumer buying power. The pickup in economic activity now underway will help to restore consumer confidence and generate real gains in consumer purchasing power. Indeed, increased consumer buying may well be the key to general economic recovery and how well it can be sustained in 1976.

OVERSEAS MARKETS AND FOREIGN DEMAND

The farmer also makes his production plans with the export market in mind. He usually exports upwards of two-thirds of the wheat and rice crops, a third to one-half of the soybean and cotton crops, and around a fourth of feed grain output. He would be in severe economic straits without export markets. And much of the world would suffer severe food shortages without U.S. exports. Foreign markets usually take 20 to 25 percent of total U.S. crop output. Variations in such an important market are very important to the prosperity of U.S. farmers.

Foreign demand for U.S. farm products is influenced by a number of forces. These forces often fluctuate widely from year-to-year, introducing substantial instability in U.S. agriculture and the economy in general. Foreign demand is not simply exports. But, in an open market, the forces of foreign demand face domestic demand forces in allocating available supplies. This rough equilibrium of economic and some non-economic forces determines exports, domestic use, and prices.

Unfortunately, major determinants of foreign demand and the manner in which they influence U.S. exports, domestic use, and prices are complicated and difficult to measure. Some of the forces influencing overseas demand depend on a complex set of institutional arrangements affecting trade which are essentially non-economic, though they too may respond to economic forces—government trading boards, variable levies, quotas, for example.

U.S.S.R. GRAIN SUPPLY PROSPECTS

In recent years changes in world food production, as they affect world food supply-demand balances, have been the major force influencing overseas demand and U.S. exports. Certainly the summer deterioration in grain crop prospects in the Soviet Union and Europe and the buying that resulted materially strengthened the price and income situation for U.S. farmers. Overseas demand for U.S. grains continues to be dominated by estimates of USSR and world production prospects. Early November estimates place the Soviet grain crop at 160 million metric tons (and some estimates are lower). Such a crop would be about 36 million tons below the 1974 crop and some 55 million tons short of the USSR production target for the 1975 crop (table 1).

TABLE 1.—U.S.S.R. TOTAL GRAIN SUPPLY AND USE. FISCAL YEAR 1974-75 AND ESTIMATES FOR 1975-76 ¹

[Million metric tons]

	1974-75	Estimated 1975-76	
		Total	Change from 1974-75
Beginning stocks ²	21.0	12.0	-9.0
Production.....	195.7	160.0	-35.7
Imports.....	5.4	27.2	21.8
Exports.....	5.2	1.2	-4.0
Domestic use.....	204.9	190.0	-14.9
Carryover stocks ²	12.0	8.0	-4.0

¹ Includes wheat, coarse grains, rice, and pulses.² Rough approximations; data not reported.

Estimated supplies of coarse grains are off 26 million tons from 1974. Although larger USSR imports will offset part of this drop, a sizeable reduction in use and carryover of coarse grains is indicated. Reported slaughter of hogs and poultry also confirm that some distress slaughter of animals is underway as the USSR adjusts its livestock numbers to smaller and higher cost supplies of feed. Such reductions in livestock numbers will also moderate Soviet demand for imported grain.

WORLD GRAIN SUPPLIES

Despite sharp cuts in grain production in the USSR and Europe, the 1975 world grain crop is expected to total slightly above last year's crop of 1,144 million tons. The increase of about 25 percent in the U.S. grain crops (wheat, feed grains and rice) offsets most of the indicated production decline in USSR and Europe (table 2).

Production in the rest of the world, including several grain exporters, is expected to increase by around 6 percent. Fortunately a larger world rice crop will improve supplies in many of the less developed countries.

But world grain consumption will expand with continued population growth and the upturn in world economic activity. And prospective world use relative to available supplies points to a continuation of low world stocks of grains. Stock improvement indicated for the U.S. likely will be offset by a stock drawdown in much of the rest of the world.

TABLE 2.—WORLD GRAIN PRODUCTION, 1974-75 AND ESTIMATES FOR 1975-76

[Million metric tons]

	1974-75	Estimated 1975-76	
		Total	Change from 1974-75
United States.....	203	249	46
Soviet Union ¹	182	149	-33
West Europe.....	142	132	-10
East Europe.....	89	85	-4
Other countries.....	528	559	31
Total.....	1,144	1,174	30

¹ Excludes minor grains.

U.S. EXPORTS OF FARM PRODUCTS

The U.S.-Soviet grains agreements will avoid some of the erratic annual purchases which in the past introduced instability into the U.S. economy. The agreement also should help farmers as they develop production plans for the coming year.

Export estimates which take into account foreign demand forces outlined above, as well as the U.S. domestic supply situation, point to big increases in U.S. exports in the 1975/76 market year. Exports of wheat and corn may run 25 to 30 percent above 1974/75 when U.S. crops were reduced by poor weather. Continued large exports of rice are in prospect and some gain is likely for exports of soybeans (table 3).

TABLE 3.—ESTIMATED U.S. EXPORTS FOR 1975-76

	Exports 1974-75	Estimated exports 1975-76
Wheat (million bushels).....	1,039.0	1,300-1,400
Corn (million bushels).....	1,145.0	1,400-1,500
Rice (million hundredweight).....	69.5	66-73
Soybeans (million bushels).....	421.0	450-500
Cotton (million bales).....	3.9	3.5-4.0

The combined volume of U.S. exports in fiscal 1975/76 may total around 15 percent larger than a year earlier. But prices of major export crops likely will average lower, perhaps around 5 percent below 1974/75. Thus, the value of farm product exports will likely total around a billion dollars above the \$21.6 billion reported for 1974/75. Imports of agricultural products also may increase in 1975/76, but the balance of agricultural trade will likely exceed the high net export level of \$12 billion in 1974/75.

PRODUCTION, USE, AND PRICES

Crop output this year will total about 11 percent larger than the weather reduced 1974 crop. Larger production is indicated for all major crops except cotton. Grain and soybean crops will total nearly a fourth larger. Unusually favorable weather for maturing and harvesting corn and soybeans caused a backup of stocks on farms and some weakness in farm and market prices in recent weeks.

Grain supplies for the 1975/76 marketing year will include the much larger 1975 grain crops but relatively small carryover stocks of wheat and corn. Even so, supplies of grains and soybeans will be large enough to cover estimated increases in domestic use, larger exports, and a sizeable increase in carryover stocks by the end of the 1975/76 marketing year (table 4).

TABLE 4.—PRODUCTION AND USE OF SELECTED MAJOR CROPS

Commodity and year	Production	Domestic use	Exports	Ending stocks ¹	Farm price ²
Wheat:					
1973-74 (million bushels)-----	1,705.0	752	1,148	247	3.95
1974-75 (million bushels)-----	1,793.0	683	1,039	320	4.04
1975-76 (estimated bushels)-----	2,138.0	694-719	1,300-1,400	365-440	-----
Corn:					
1973-74 (million bushels)-----	5,647.0	4,631	1,243	483	2.55
1974-75 (million bushels)-----	4,651.0	3,632	1,145	359	2.95
1975-76 (estimated bushels)-----	5,804.0	3,940-4,140	1,400-1,500	624-724	-----
Rice (paddy):					
1973-74 (million hundredweight)----	92.8	37.0	49.7	7.8	13.80
1974-75 (million hundredweight)----	114.1	40.2	69.5	7.1	10.45
1975-76 (estimated hundredweight)---	124.1	41.4-42.2	66.4-72.6	16.4-23.4	-----
Soybeans:					
1973-74 (million bushels)-----	1,547.0	897	539	171	5.68
1974-75 (million bushels)-----	1,233.0	797	421	186	6.50
1975-76 (estimated bushels)-----	1,520.0	831-881	450-500	325-425	-----
Cotton:					
1973-74 (million bales)-----	13.0	7.5	6.1	3.8	44.4
1974-75 (million bales)-----	11.5	5.9	3.9	5.7	41.0
1975-76 (estimated bales)-----	9.0	6.8-7.3	3.5-4.0	3.6-4.6	-----

¹ Totals do not quite balance due to small imports.² Dollars per bushel, hundredweight or bale.

LIVESTOCK AND LIVESTOCK PRODUCTS

Production of livestock products this year will be down from 1974, possibly by around 2 percent. This is a very small decline in view of nearly a fifth less pork output. Although fed beef output is lower, sharply increased output of less finished beef is more than offsetting. Broiler output is also larger due to a rapid recovery in second half 1975. Reduced output of livestock products this year, much of which developed in first half 1975, reflects adjustments of livestock producers to the weather reduced and high cost 1974 feed crops (table 5).

With reduced output of meats and poultry and well-maintained consumer buying power, livestock product prices increased steadily from the spring of 1975. Lower milk production and a strong market this summer sparked sharp increases in prices for milk and dairy products. With the midyear price surge, producer prices of livestock and products in the second half of 1975 will average around a fifth above a year earlier.

TABLE 5.—OUTPUT OF LIVESTOCK PRODUCTS, 1974 AND ESTIMATES FOR 1975 AND 1976

Commodity	1974	1975 estimate (percent)	January to June rate	
			1975	1976 forecast (percent)
Beef (commercial) (billion pounds)-----	22.8	3	11.4	5-7
Hogs (billion pounds)-----	13.6	-18	6.0	-8-9
Broilers (billion pounds)-----	7.9	7	3.9	10-12
Eggs (billion dozen)-----	65.9	-2	31.9	0-2
Milk (billion pounds)-----	115.4	0	59.5	½-1½
Index 1967=100-----	105.0	-2	-----	-----

LIVESTOCK DEVELOPMENTS THROUGH MID-1976

Higher prices for livestock, poultry, and milk and lower cost feed have greatly improved prospective returns on feeding operations.

Third quarter placements of cattle on feed were up 22 percent from a year earlier, including September placements in the seven major feeding States 85 percent above a year earlier. And the October 1 inventory of cattle on feed was slightly above a year earlier for the first time since October 1973. Availability of feeder cattle, feedlot capacity, and feeding costs provided major ingredients for further placements of cattle on feed this fall and winter. These developments point to more fed beef in 1976. But total beef production, while continuing above year-earlier levels, may decline seasonally through next spring as non-fed slaughter declines.

Hog producers also are responding to high hog prices and more favorable feeding margins. Farrowing intentions for September–November are down 7 percent from last fall, but the cut is less than producers had planned last June. Reported farrowing plans for the coming December–February period are up 6 percent from a year earlier—the first increase for the period since 1972/73. Although an expansion in pork output is underway, it will be mid-1976 and beyond before we can expect much increase in pork production.

Production of broilers, already increasing, may run 10 to 12 percent larger than a year earlier during the closing months of this year. Despite a small hatchery supply flock, broiler production is likely to hold around a tenth larger in first half 1976.

Milk production is recovering some this fall as dairymen respond to rising milk prices and improved milk-feed price relationships. Production in 1975 is expected to hold close to the level of the past 3 years. In first half 1976 production will likely run a little above year-earlier levels as gains in output per cow offset an expected small decline in cow numbers.

Even with some increase in output, livestock product prices in first half 1976 may average near advanced levels in the last half of this year, and possibly some 15 to 20 percent above a year earlier. Biggest gains are indicated for hogs and cattle (table 6).

TABLE 6.—PRICES OF MAJOR LIVESTOCK AND LIVESTOCK PRODUCTS 1974
AND ESTIMATES FOR 1975 AND 1976

Commodity	1974	Estimated 1975	January to June average	
			1975	1976 forecast
Steers (choice Omaha), dollars per hundredweight.....	41.9	44.8	41.9	45–48
Barrows and gilts (7 markets) dollars per hundredweight..	35.1	50.5	42.7	52–57
Broilers (9 city average), cents per pound.....	38.2	45.1	42.4	42–47
Eggs (New York grade A large), cents per dozen.....	58.2	56.9	54.5	52–56
Milk, dollars per hundredweight.....	8.3	8.60	8.12	8.75–9.00

GROWER RECEIPTS AND INCOME

The price and income outlook for farmers improved sharply around mid-1975. Improvement began as unfavorable growing weather brought a deterioration in world grain crop prospects, especially in USSR and Europe. These developments sharply expanded foreign demand for U.S. grains. But bumper U.S. grain and soybean crops, now being harvested will cover expected demand increases and provide for increased carryover stocks. Increased demand for the record 1975 crop will help to maintain crop prices and grower receipts.

ESTIMATED MARKETINGS, PRICES, AND INCOME FOR 1975

Crop receipts in the closing months of 1975, when marketings are seasonally large, will depend as usual on price movements and producers ability and inclination to sell or possibly to hold and thus shift more marketings into 1976. This greatly complicates the task of estimating calendar year marketings and the inventory adjustment for the year.

Reduced marketings of livestock products and sharply higher prices will increase livestock receipts in calendar year 1975. The indicated gain of around \$2 billion from 1974 more than offsets the expected decline in crop receipts (table 7).

TABLE 7.—CASH RECEIPTS, EXPENSES, AND NET FARM INCOME, 1974 AND ESTIMATED 1975

[In billions of dollars]

	Calendar years	
	1974	Estimated 1975
Cash receipts.....	93.5	94.1
Livestock products.....	41.4	43.5
Crops.....	52.1	50.6
Nonmoney income.....	7.1	7.4
Government payments.....	.5	0.7
Realized gross income.....	101.1	102.2
Production expenses.....	73.4	77.2
Realized net income.....	27.7	25.0
Inventory change.....	-1.6	-----
Total net income.....	26.1	-----

Although a small gain in gross income is indicated for 1975, farm production expenses have increased from 1974. Farmers apparently purchased less feed and fertilizer than in 1974. But prices paid this year for production items, interest, taxes, and wages will average around a tenth higher. As a result, an increase in farm production expense of some \$3 to \$4 billion will more than offset indicated increases in gross income. Accordingly, realized net farm income for 1975 may total around \$25 billion. This would be nearly a tenth below 1974, but still the third highest year of record.

FARM INCOME IN FISCAL (CROP) YEAR 1975-76

The outlook horizon for 1975 crops, many of which are marketed largely in 1976, generally extends into next summer. Relatively favorable price prospects and no restraints on production likely will result in large crops again next year, if growing conditions are favorable. Obviously a forecast of income for calendar year 1976 requires the kind of judgment about 1976 crops that is difficult and not very useful at this time. However, we can describe the output, price, and income outlook for farmers in the 1975/76 marketing year using estimates and comparisons for the approximate "fiscal (crop) year" 1975/76. This convenience avoids some of the difficult problems of estimating the seasonal pattern of marketings as well as quarterly income estimates.

Output estimates for fiscal 1975/76 reflect the record 1975 crop which is virtually assured. But with the stronger foreign and domestic demand, crop prices are expected to hold up well enough to increase

crop receipts modestly from 1974/75. Sharply larger livestock receipts reflect the low level of output and much higher prices (table 8). Combined cash receipts indicated for 1975/76 total around \$10 billion above the \$91 billion in 1974/75. Even though continued increases in farm production expenses will offset much of the gain in gross income, a sizeable increase in realized net farm income is suggested for 1975/76. The indicated rate runs above the \$25 billion estimated for calendar year 1975 and well above fiscal 1974/75. Moreover, the gain in total net income will be even larger since inventories will be accumulating. Part of realized net farm income in 1974/75 was due to a sell-off of inventories.

TABLE 8.—FARM OUTPUT AND PRICES, CALENDAR YEAR AND FISCAL (CROP) YEAR, 1974, 1974-75 AND ESTIMATES FOR 1975 AND 1975-76

[Indexes 1967=100]

	Calendar 1974	Years 1975 estimate	Approximate fiscal (crop) year	
			1974-75	1975-76 estimate
Total farm production:				
Livestock output.....	105	103	104	104
Crop production.....	110	122	110	122
Prices received by farmers.....	184	182	177	190
Livestock products.....	163	173	158	188
Crops.....	214	196	205	195

FOOD SUPPLIES AND PRICES

At the same time that net income is improving, the food production and price outlook is encouraging. The upturn in production of meats, poultry, eggs, and milk, along with the large crops moving to market, improves supplies of major field crops, many fruits, vegetables, and sugar crops as well as supplies of animal products. Bigger supplies will help to moderate upward pressure on food prices. Although retail food prices may increase slightly from the third to the fourth quarter, lower prices are indicated for beef, poultry, fresh fruits, and potatoes. For the year, retail food prices will likely average about 9 percent above 1974, substantially less than the increases in 1973 and 1974. Retail food prices will continue to rise moderately, but year-to-year increases are expected to narrow in the next 6 to 9 months.

FOOD—SUPPLIES, DEMAND, AND CONSUMPTION

OUTLOOK FOR FOOD SUPPLIES AND PRICES

[By Kenneth R. Farrell, Deputy Administrator, Economic Research Service, USDA]

INTRODUCTION

In no period in recent history has the U.S. food industry undergone such economic stress as in the period 1972–75. Caught in the confluence of erratic domestic and foreign production, rising consumer demand, and energy crisis and pervasive inflationary pressures throughout the world, food prices, marketing costs and consumer expenditures soared at rates which most of us would have thought inconceivable just a few years ago. In September 1975 the Consumer Price Index for all food stood at 177.8—an increase of 42 percent in 3 years. In 1972 the farm food marketing bill totaled \$75 billion; we expect the bill to approximate \$100 billion in 1975, an increase of one-third. In 1972 consumers spent about \$123 billion for food. We expect them to spend about \$181 billion in 1975, an increase of 47 percent in 3 years.

The food sector is by no means the only one to have experienced spiraling prices since 1972. The CPI components for fuel and utilities, household services, and medical care services have each increased about as rapidly as food. Nevertheless, the behavior of food prices became a national economic issue and has ranked high on the national anti-inflation policy agenda for the past 3 years. At this conference a year ago the outlook for food supplies and prices was a source of great concern as the nation struggled with means to alleviate double digit inflation. On the heels of annual increases of nearly 15 percent in both 1973 and 1974 some private forecasters were predicting a 20–25 percent increase in 1975 food prices.

Fortunately, those forecasters were wrong again. Although major uncertainties remain concerning the food sector at home and abroad, the price spiral of 1973 and 1974 was dampened substantially. We now expect retail food prices this year to average about 9 percent above 1974 and prospects for the first half of 1976 appear favorable for further dampening of the spiral.

1975 IN PERSPECTIVE

RETAIL PRICES

The rate of increase in retail food prices slowed markedly during the early months of 1975. By May, the Consumer Price Index for food was up only about 1 percent from December 1974.

Declining prices for meat and poultry contributed most to the slower rate of increase in average food prices early this year. U.S. harvests of feed grains and soybeans had been sharply reduced in 1974 by extremely poor growing weather. Carryover stocks of these commodities were also low, partly due to strong export demand over the previous 2 years. The resulting tight supplies and high prices for livestock feeds prompted a rapid liquidation of hogs and sent large numbers of cattle directly to slaughter rather than to feedlots in late 1974 and early 1975. This large influx of meat coming to market, along with some softening in consumer demand as the economic recession deepened, not only affected prices for red meat but for poultry and dairy products as well.

With high feed costs and relatively low product prices, hog and poultry producers cut back output sharply in first half 1975. While total cattle slaughter remained high by historical standards, it declined seasonally in the spring as pastures and ranges improved. And, with a larger share of cattle slaughter made up of calves and lighter animals with no grain feeding, beef production also dipped. With a sharp cut in hog production, pork output by mid-year was running around 20 percent below a year earlier. As the total supply of meat and poultry fell during the late spring and early summer, their prices rose sharply and accounted for the major share of the mid-year bulge in average food prices.

In contrast to livestock products, prices of crop-related foods were generally rising at the beginning of 1975. Part of these increases represented a delayed pass-through of higher prices for most crop commodities during the previous year. Rising costs associated with marketing services also contributed to higher retail prices in early 1975.

By spring, however, the situation had begun to change for crop-related foods in essentially the reverse of the pattern for livestock-related foods. Evidence began to mount that U.S. crop producers had again geared up for all-out production in 1975 as they had attempted to do the year before. Export sales had fallen off due to generally improved crops abroad in 1974 and to the economic recessions gripping many other countries. Domestic sales of many highly-processed food products were also lagging as a result of higher retail prices in the face of declining demand. Consequently, crop-related food prices began to decline gradually in the spring and continued to soften through the summer.

Fourth quarter retail food prices may average slightly above the previous quarter. Lower prices are likely for beef, poultry, fresh fruits, and potatoes. But increases for most other food categories, especially pork, fish, and dairy products are likely to be more than offsetting.

Compared to a year earlier fourth quarter 1975 food prices are expected to average about 8 percent higher. Pork and fresh vegetables

likely will show the greatest increases from a year ago with poultry, fishery items, dairy products, and non-alcoholic beverages also registering significant advances. Smaller price increases are indicated for beef and veal, fresh fruit, processed fruits and vegetables, and cereal and bakery products, while prices for vegetable oil products as well as sugar and sweets are down from their high levels of a year ago.

For all of 1975, food prices will average close to 9 percent above 1974 compared to annual rates of increases of about 14½ percent in each of the preceding 2 years. Among major food groups, cereal and bakery products will average about 12 percent above 1974. Meat and poultry prices will average 8 percent above 1974 while dairy products, fruits and vegetables will average about 4 percent and sugar and sweets about one-fourth above their respective 1974 averages.

Higher farm prices, likely for meat animals, poultry and eggs, and dairy products, likely will account for about half of the 1975 food price rise. Wider marketing spreads, primarily associated with crop-related foods, will account for the other half.

PRICE SPREADS AND MARKETING COSTS

Farm-retail spreads reached record levels in the first quarter of this year. For the year as a whole we expect the spread on our food market basket to widen about 8 percent, compared to 20 percent in 1974. During the past 2 years, large increases have occurred in costs of packaging, transportation, energy, labor, and most other inputs used by food marketing firms. However, price increases for some inputs have slowed in 1975 as inflationary forces in the economy eased.

Price of intermediate goods and services purchased by food marketing firms rose about 5 percent from the fourth quarter of 1974 to the second quarter 1975, compared with almost 11 percent for the same period a year earlier. Prices of packaging materials, which account for an eighth of total marketing costs, held almost steady following the substantial boost last year. Energy costs continued to go up, but the rate slowed markedly. Interest rates on short-term loans declined during the first half of the year and currently are substantially lower than a year ago, thus lowering the cost of financing inventories and other capital outlays.

The largest expense of food marketing firms is direct labor costs. Increases in hourly earnings of food processing, wholesaling and retailing employees the past year have been about 9 percent, compared with an average annual rate of a little over 6 percent since 1970. The rate of increase in hourly earnings slowed slightly in the first half of this year compared with a year earlier, but rising labor costs continued to exert upward pressure on farm-retail spreads.

The effective wage rate increase slowed in 1975. For all employees covered by collective bargaining agreements the increase for the first half of 1975 was 3.5 percent while the increase for the first half of 1974 was 4.3 percent. About four-fifths of the wage increase was due to current and prior settlement terms and the remaining fifth resulted from escalator clauses, mainly cost-of-living adjustments.

Profits of food marketing firms have remained relatively stable from 1974 to 1975. Profit-to-sales ratios (after taxes) for leading food

chains the first half of this year, excluding A&P which had a large write-off due to store closings, were almost unchanged from a year earlier at 0.85 percent of sales. Indications are that third quarter profit ratios changed little from the second quarter. Profits after taxes for 14 leading chains, including A&P amounted to 11.1 percent of stockholders' equity in 1974, up substantially from 1972 and 1973. Available data suggest that equity profits this year may hold around the 1974 rate.

Profit ratios for food manufacturers averaged slightly higher in the first half of this year than a year ago, and the second quarter ratio of 3.3 percent of sales was substantially higher than a year earlier. Equity profits for food manufacturers were also up slightly in the first half of the year.

The cost of shipping farm and food products by rail increased about 11 percent between January and August 1975. Freight rate increases are expected to moderate in coming months. However, rail rates will keep pace with increases in labor and other operating costs of railroads.

EXPENDITURES FOR FOOD

Personal consumption expenditures for food likely will total around \$181 billion in 1975, up about a tenth from last year reflecting mostly price increases and population growth. This compared to increases of 14.6 percent in 1974, 16.4 percent in 1973, and annual increases of 2-8 percent in the late sixties and early seventies.

Away-from-home expenditures are increasing more rapidly than those for food at home this year, a reversal from the situation of the last 2 years and a return to the typical pattern of the decade ending in 1972. Away-from-home expenditures will account for about 21 percent of total food expenditures, only marginally different from the situation of the last 8 years.

USDA expenditures for domestic food programs now represent 4 percent of personal consumption expenditures for food. In the 1974/75 recession, they demonstrated how they help to maintain demand for food.

CONSUMPTION

Per capita food consumption in 1975 may fall a little over 1 percent to the lowest level in 7 years. A 2-percent reduction in consumption of animal food products accounts for almost all of the decline. Supplies of fed beef, pork, and poultry products have been severely constricted this year. Crop food consumption per person in 1975 likely will be down fractionally from last year as higher prices and sluggish demand limited movement for many highly-processed foods earlier this year.

PROSPECTS FOR 1976

FOOD PRICES

In forecasting prices for food and their agricultural products as in most forward-looking human endeavors, we see through the glass but darkly. Even for the first half of the year, there are major uncertainties about exports, the strength of the economic recovery, and the

reactions of livestock producers to changed conditions. Food supplies and prices in the last half of the year will be so heavily conditioned by the 1976 crops and weather that forecasting them at the present time is not too helpful. Thus, we shall concentrate on the first 6 months of 1976 based upon what we now regard as the most likely set of conditions—in the interest of conserving time—not because the uncertainties can be disregarded.

With harvesting of the very large 1975 crop essentially complete, the outlook for food supplies and prices through mid-1976 will be heavily influenced by the manner in which these crops are utilized and their offset on livestock production. Of particular importance is the extent to which livestock and poultry producers decide to increase output utilizing this year's larger feed crops. These decisions, in turn, will depend partly on the level of foreign demand for U.S. grain and soybeans. With record crops now assured, total supplies of these commodities are sufficiently large to permit both increased livestock feeding and an expanded level of exports, including reported and anticipated sales to the Soviet Union. However, the uncertainty surrounding the relative growth in these two outlets must be recognized.

Under the conditions which now seem most likely, food prices are expected to rise at an annual rate of 4–5 percent during the first half of 1976, or an average rate of a little over 1 percent per quarter. First quarter prices may rise at a slightly faster pace as output of meat and poultry declines in the face of strengthening domestic demand and increasing processing and marketing costs. However, the rate of increase is likely to slow from the first to the second quarters as output of fed beef, pork, and poultry expands. Seasonal price increases for fruits and vegetables as well as higher marketing and transportation costs likely will account for most of the small average price advance expected for the second quarter.

Alternatively, if crop exports are lower than currently anticipated, food prices likely would increase only fractionally this winter as fed beef and poultry output expands. Further recovery of livestock feeding including increased pork output, would result in a slight decline in average food prices in the spring. With higher exports than now anticipated, food prices may still rise at a relatively slow rate during the first quarter as slaughter of cattle and calves with little or no grain feeding continues at a fast pace and partially offsets further reductions in output of other animal-related foods. However, food prices likely would jump sharply in the second quarter as beef output contracts to join with continued low output of other livestock-related foods and prices of crop-related foods advance to reflect higher raw product and marketing costs.

MARKETING COSTS AND SPREADS

Marketing spreads—which have increased in all but 2 of the past 20 years—can be expected to continue to advance in the first half of 1976 but probably at a slower pace than in 1975 and certainly slower than in 1974. The rate of increase may slow to around 5 percent from year-earlier levels. This compares with year-to-year rise of about 11 percent for the first half of this year.

Despite general economic recovery anticipated in the first half of next year, several major inflationary pressures may impact on the cost of marketing food. The marketing bill for U.S. farm foods may average 6 percent higher in 1976 than in 1975. Major contributors to this rise will be increased costs of:

Labor—up 6–8 percent;

Packaging materials—up about 5 percent;

Other costs—up about 7 percent due chiefly to energy and transportation.

Productivity should improve slightly due to greater volumes of food marketed and help restrain increases in these cost elements.

About one-fifth of the workers in the food marketing industry are covered by major collective bargaining agreements. Between now and June 1976, agreements covering about a quarter million of these workers will expire. Renegotiated agreements, prior wage settlement terms, and cost-of-living adjustments will continue strong upward wage trends in the food industry. Settlement terms of collective bargaining agreements have a far-reaching effect on the wage structure of the entire sector. Wages of nonunion and management employees generally follow changes in collective bargaining agreements.

SOME LONGER-RUN ISSUES

Finally, I want to back off from the events of 1975 and those foretold for 1976 and look at some current and evolving characteristics of the food industry that may affect its performance in the years ahead. We will touch only on a few highlights. Many others also deserve consideration.

1975 demonstrates that double-digit inflation in food prices has not become inevitable and 1976 offers the hope of an even lower rate of food price inflation than in 1975. The events of the last few years emphasize what we have tended to forget—that a major source of price instability is natural disaster—droughts, floods, too much rain, early frosts, insects and diseases.

This emphasizes one of the major characteristics of the next decade—instability—much of it tied to weather both here and abroad.

A second characteristic obvious from the events of the past 3 years and much of the preceding discussion at this Outlook Conference, is the close ties of the entire world in food supplies and prices. The CCC stocks and similar stocks in Canada and Australia of the fifties and sixties which provided the cushion between events abroad and domestic food price have gone and appear unlikely to reappear as a continuous feature. The emergence of the USSR as a participant in the world market means that the tremendous instabilities of grain production in that part of the world have become a part of our uncertainties.

A significant element in instability is inflationary psychology, as applied to commodity prices. With the kind of commodity markets we have around the world, there is a very strong tendency for rapid price increases which are initiated by natural disaster or actions such as the oil embargo to be translated into a much greater runup of prices than any economist can find a basis for in the underlying supply and demand relationships. Whether it is possible to change markets in a way that will reduce the effects of such actions is another question.

Instability cannot be abolished by decree. It will be with us for some time, perhaps permanently, although hopefully not in the degree observed in 1973 and 1974. A marketing system which must cope with instability is very different from one which must deal only with small changes, most of which are relatively predictable. It is a more expensive system, since it must provide the means of adjustment to instabilities arising from many sources.

What of the long-run trends underlying this instability? The consensus view of prominent agricultural economists seems to be that the long-run supply price of agricultural products is moving upward and this is to be expected to continue. This view was undoubtedly heavily conditioned by the flattening out of the productivity curve for agricultural production from the mid- to late sixties. The most recent increases in productivity would tend to modify this view if they are continued. Other important elements in this conclusion are the energy-intensive nature of agricultural production and the expectation of fairly steady rises in energy costs in the foreseeable future. Another principal element is the virtual completion of the off-farm migration and the disappearance of the large labor reserves in the countryside which could lead to more rapid increases in farm wage rates.

Once food products leave the farm, the elements of instability are less and largely man-made. The long-term story of marketing spreads is that they increase at almost the same rate as consumer prices in the rest of the economy. The view of the operators of several large-scale econometric models seems to be for about 5–6 percent annual increases in the Consumer Price Index for goods and services other than food—barring another oil embargo or similar shocks over the next 5 to 10 years.

Further changes are in prospect in food processing and retailing. The supermarket building boom ended in the early sixties. Marketing strategy shifted to trading stamps and other merchandising devices which added to costs. A boom in convenience stores began which has now run its course. It took only 10 years to reach a near saturation point on convenience stores, compared to 20 years for supermarkets. The switch in emphasis from trading stamps and related merchandising techniques to price competition began in the early 1970's and culminated in the A&P WEO program of 1972 without which average food prices would have risen another $\frac{1}{2}$ percent that year. That emphasis on price competition was largely overridden by the sharp price increases of 1973 and 1974 but it is now back with renewed vigor.

The next few years will see a continued movement into larger stores—a number of these will be “hypermarkets”—which combine a grocery supermarket with a department store. This addition of more nonfood items will provide much of the growth which supermarket firms are looking for without putting as much pressure for expansion on the food end of the business. To what extent this will moderate the pressure for price competition remains to be seen.

Productivity is the offsetting factor to higher input prices. Unfortunately, we have not had much in the way of productivity to offset the staggering increases in the input prices for fuel, packaging, interest and labor, and other intermediate products. Consequently, unit costs have risen rapidly maintaining the upward pressure on retail prices

even as we see farm prices decline for some commodities. Total unit costs rose 14 percent in 1975. Unit labor cost will be up 13 percent and other costs up 15 percent. Output per manhour is declining in retailing while making only slow headway in processing. Total output per manhour in marketing remained unchanged in 1974 and 1975. Since 1967 we have shown little progress in our ability to increase productivity. This contrasts sharply with the fifties and early sixties when substantial improvement was noted. Retail store capacity has expanded faster than volume. Consequently, overhead expenses for depreciation, rent, etc., are raising unit costs as a result of excess capacity.

The away-from-home market for food is a varied and growing segment of the marketing system. It includes not only restaurants and cafeterias, but also school and college lunchrooms, airline meal service, institutional mess halls, and so forth. Both the voluntary and captive parts of the market have been growing. The most dramatic increases have been in so-called "fast food" establishments.

The emphasis in all types of away-from-home eating establishments has been strongly on the side of reducing labor inputs. In fast food establishments, kitchen labor is greatly reduced by a streamlined menu and labor out front by self-service. In many more conventional restaurants, full service is maintained in the dining room but the emphasis on reduction in labor requirements in the kitchen is nearly as great as in the fast food establishments.

This is not to say that all restaurants are moving in this direction. There is a counter-trend with emphasis on quality and service. For those who are willing to pay the price, many new restaurants have sprung up which emphasize quality, variety and service. But within the quality restaurant area, many—especially the chain operators—emphasize a limited line. These developments of course appeal to a different segment of the market than the fast food establishments. This different segment of the market may be different people, differentiated by income, taste, etc., or it may be the same people in different circumstances.

All of these changes are having a marked impact on the suppliers to the away-from-home market. With the emphasis on getting labor out of the restaurant or institutional kitchen, fabricators are supplying increasing quantities of food in prepared and semi-prepared forms, which will permit the restaurants or institutions to put the item on the table with a minimum of labor input. For instance, meats are being cut, wrapped and boxed at the packing plant and delivered to the kitchen ready to go into the oven or onto the stove.

These are but a few of the changing characteristics of our food marketing system. Others might be cited concerning structure, economic concentration and the myriad of local, state and Federal Government regulations which overlay the system. We understand only very poorly the impacts of the changing characteristics upon performance of the food industry. Certainly such issues deserve high priority on the agricultural economic research and extension agendas of the immediate future.

OUTLOOK FOR USDA FOOD PROGRAMS

[By Edward J. Hekman, Administrator, Food and Nutrition Service, USDA]

It's a pleasure to take part in the National Outlook Conference and to discuss with you some developments in the USDA food programs.

This past year has been a very active year for the food programs, both from the standpoint of providing assistance to more needy persons and from a legislative standpoint. I wish to touch on each of these issues briefly today.

Food assistance to needy persons through the Food and Nutrition Service programs reached record high levels during fiscal 1975. At the end of the year, virtually 100 percent of the population was served by our major family food assistance program, the Food Stamp Program. It has replaced the old Food Distribution Program, and we think this is a major improvement in providing food to people. About 88 percent of the school children enrolled in primary and secondary grades have access to the National School Lunch Program. In addition, we have several hundred thousand persons receiving assistance from a number of other programs such as the supplemental food programs, school breakfast and milk programs and special food service programs.

But, frankly, we aren't too pleased with this program duplication. We would like the Food Stamp and School Lunch Programs to be the best they possibly can be, but we don't appreciate doing the same job 2 or 3 times over.

USDA cost for the food assistance programs in fiscal 1975 totaled \$6.9 billion—as you can see in my first chart—about 45 percent greater than the previous year and about 5 times more than in 1969 when the Food and Nutrition Service was established. This year's costs are expected to approach \$9 billion—which would be about 70 percent of the total budget of the USDA.

FOOD STAMP PROGRAM

PROGRAM COSTS

Total USDA cost of the Food Stamp Program—which accounts for more than two-thirds of the Food and Nutrition Service budget—was near \$4.7 billion in fiscal 1975. Bonus coupons are the major cost of the program, accounting for 94 cents of each dollar spent on the Food Stamp Program (Chart 2). Total expenditures for fiscal 1976 are estimated at \$5.7 billion, unless there are legislative changes in the program—which I will discuss later.

PARTICIPATION

Average participation in the Food Stamp Program increased considerably from 13.5 million persons at the beginning of the fiscal year to a peak of 19.4 million in April. It then edged off slightly, due mainly to seasonality, to around 18.5 million in September.

This rapid expansion was due to a combination of internal growth and projects switching from the Food Distribution Program. As of January 30, Puerto Rico switched completely from the Food Distribution to the Food Stamp Program, and now we have 1½ million people there in the Food Stamp Program. As unemployment increased last winter, more households fell within the eligibility range, and many of them participated in the Food Stamp Program. Our analysis shows that a one percent change in the unemployment rate results in somewhere between 500,000 and 750,000 additional participants.

About 22 percent of participants are from one and two-member households. More participants are in 4-member households than any other single household size group.

For the fiscal year, about three-fourths of the increase in participation consisted of people that were not on public assistance programs. By the end of the year, over one-half of all participants were in non-public assistance households. By income groups, our participants are concentrated at the lower income levels. As our chart shows, some participants have sizable incomes (mainly large households), but they represent a relatively small part of the population. Over one-half of the recipient households have less than \$4,000 annual income. About 6 percent have incomes before deductions of over \$9,000.

CHILD NUTRITION PROGRAMS

COSTS

In fiscal 1975, USDA contributed about \$2 billion in assistance to the Child Nutrition Programs. These include School Breakfast, Summer feeding, Pre-school feeding, and nonschool programs as well as school lunch. Most of this assistance went to the National School Lunch Program. This year, due both to higher reimbursement rates and some new programs, we expect to spend over \$2½ billion.

PARTICIPATION

Total participation in the National School Lunch Program has increased only slightly in recent years. On the average, a little more than 25 million children participated in the Program in fiscal 1975—about half a million more than the previous year. We know that more students participated on an infrequent basis, but we don't have an actual student count. A total of 4 billion lunches were served last year.

Although total participation was up some, children paying full price for lunches declined slightly from the previous year. An increase of about 10 percent in free and reduced price participants more than offset the decline. In fiscal 1975, 60 percent of participants paid full price compared with 40 percent free or reduced price.

LEGISLATION

PUBLIC LAW 94-105

Now, let's look at child nutrition from the legislative view. Over the last 6 to 8 years we have not had a single year without program changes due to new legislation. Public Law 94-105, just passed, is the most far-reaching legislation in recent years. These changes are expected to raise school lunch participation to about 26.5 million participants this year.

One of the major provisions of the legislation was the extension of the School Lunch Program by simply redefining a "school" for the purpose of child nutrition legislation. Any public or licensed nonprofit private residential child care institution, including orphanages and homes for the mentally retarded, as well as homes for unwed mothers, are now defined as schools and are eligible for the National School Lunch Program and School Breakfast Program as currently operated.

Eligibility for reduced priced lunches was extended up to 195 percent of the Secretary's Income Poverty Guidelines. This means, for example, that school lunches are now available for not more than 20 cents for all children in families of 4 earning incomes up to \$9,770. Further, all schools must now offer reduced priced lunches, whereas previously, such programs were optional.

In secondary schools, the "Type A" lunch in the future will only need to be "offered" rather than "served". Congressional interest here reflects the general public's concern about food and the waste of food. This change was made in an attempt to reduce plate waste. Failure by the student to accept offered food does not affect the full charge to the student for a lunch meeting the requirements, nor the amount of Federal reimbursement made to the school. However, this relaxation raises a serious question about maintaining the nutritional integrity of the lunch.

The new legislation extended the School Breakfast Program, the Year-Round Feeding Programs, the Summer Feeding Program, and Women, Infants and Children Program (WIC Program), all of which would have expired in the absence of new legislation. These programs, however, were not simply extended, but rather they were modified and enlarged in various ways.

The Summer Feeding Program was opened up to virtually any area that wishes to have a program. The program was also specifically extended to residential summer camps that previously had not been eligible. The School Breakfast Program was given permanent authorization. The WIC Program was extended for 3 years. It was expanded from the previous \$100 million level to \$250 million annually, and it was effectively insulated from the appropriations process, by making priority use of Section 32 funds.

These various changes will result in increased federal expenditures of around \$1.2 billion over previously budgeted amounts, which assumed a cutback in support of nonneedy children. On an annual basis it is anticipated that the actions will result in an added Federal cost of around \$500 million over the cost of a simple extension of the above

programs. The majority of added costs will result from the redefinition of a school and increased participation in the reduced price lunch program.

Increasingly in the future, the program likely will focus upon providing financial support to needy children. The pendulum has swung to the point where nearly $\frac{2}{3}$ of all Federal support for these programs now goes for needy children.

FOOD STAMP LEGISLATION

As we indicated earlier, there has been substantial growth in the Food Stamp Program to its present level of some 18.5 million participants. It has become increasingly apparent that major structural changes should be made in the program to meet identifiable problems with the Food Stamp Program.

The Congress in January asked the Department to make a thorough review of the Food Stamp Program and make a report to the Congress by June 30. This report has been made and it identifies various areas in which the program should be changed. These include:

1. Targeting eligibility so that program benefits would be concentrated among the most needy households.
2. Increasing program equity so that households with like income and resources would be treated alike.
3. Simplifying the program so that general administrative procedures would be easier and less subject to error.

A Food Stamp Proposal by the Administration went forward on October 20, called the National Food Stamp Reform Act of 1975. This is the most extensive restructuring of the Food Stamp Program ever considered and one that addresses the major problems identified in the administration of the program. It would:

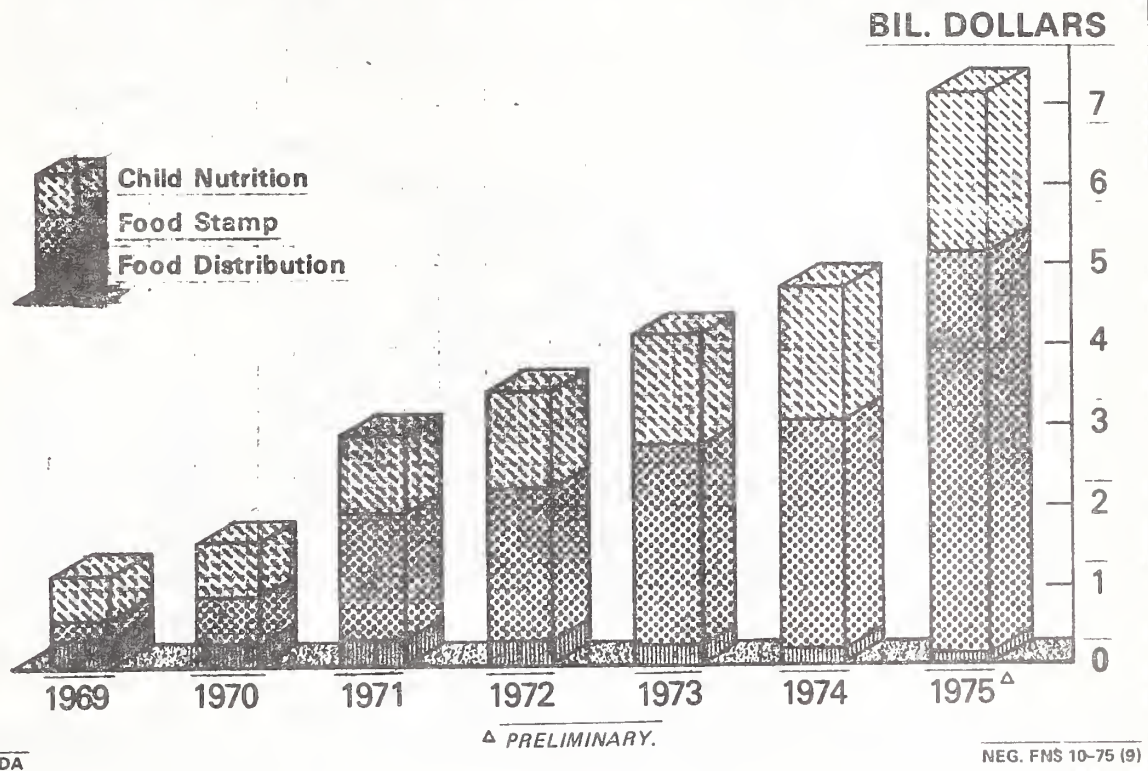
1. Limit program eligibility to households that have incomes below the poverty level, after allowing for income deductions.
2. Standardize these deductions at \$100 per household per month (\$125 per month if the household has an elder person), in lieu of the present system of a multiplicity of income deductions.
3. Provide that a set percentage of remaining income (30%) be required as a purchase requirement, in lieu of variable amounts.
4. Provide for income to be computed on the basis of the average of the last 90 days income, rather than the next 30 days. Farmers eligibility, however, would still be based on a longer period of past income because of the nature of their earnings.
5. Categorical eligibility of public assistance households would be eliminated so that all households would be treated alike.

We believe these changes would go a long way to improving the program and make it generally acceptable to the public.

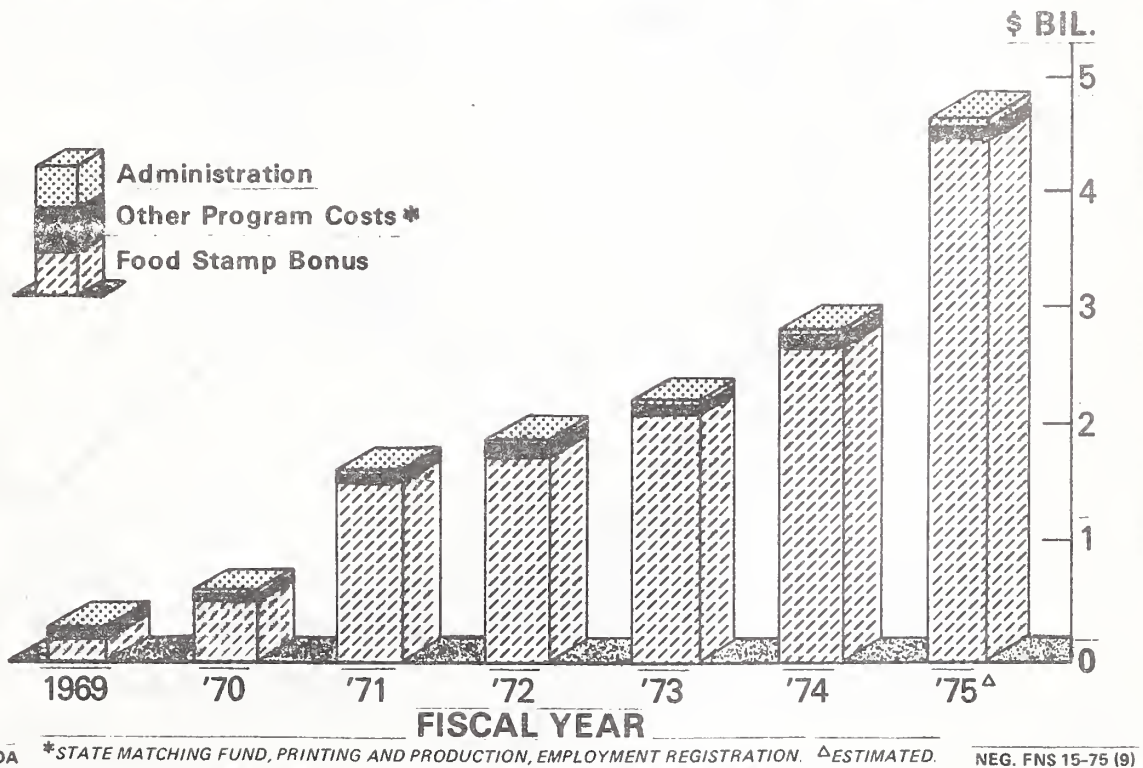
Regarding the purchase requirement, one proposal before the Congress would omit it entirely and simply give the Federal bonus amount in stamps. We do not favor such a change. It would sharply change the self-help character of the program and would eliminate the nutritional emphasis of the program. No longer would the value of stamps issued allow a household to purchase a nutritionally adequate diet.

I thank you for the opportunity to be with you today, and I'll be glad to answer any questions you may have.

USDA FUNDING FOR FOOD ASSISTANCE



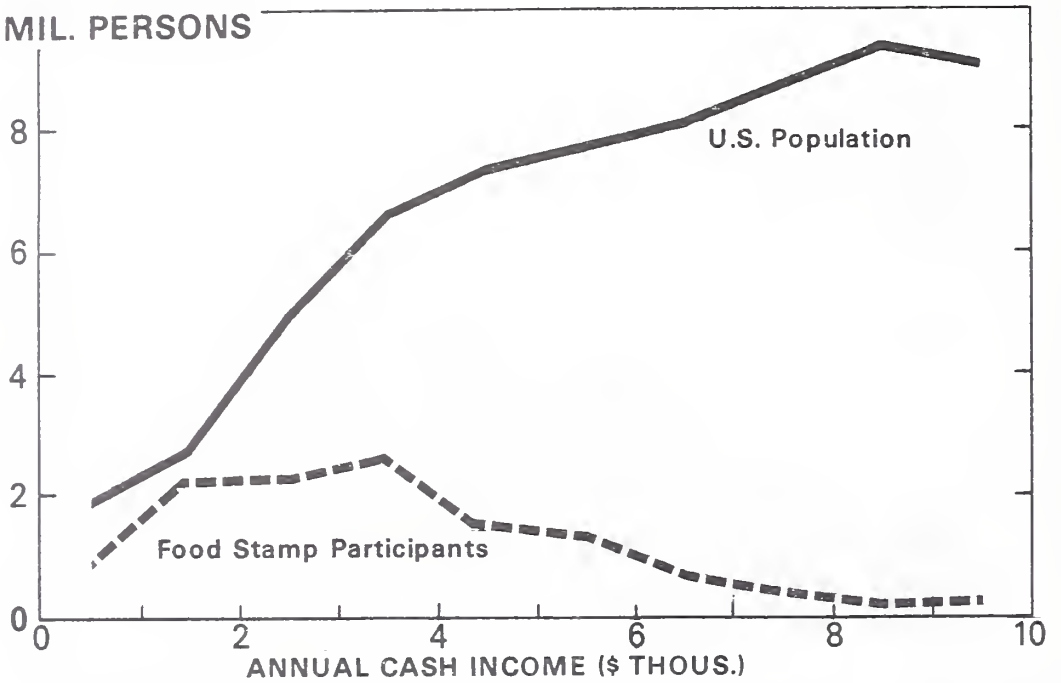
USDA COST OF THE FOOD STAMP PROGRAM



FOOD STAMP PARTICIPATION AND U.S. POPULATION, 1974

(By Income Group)

MIL. PERSONS

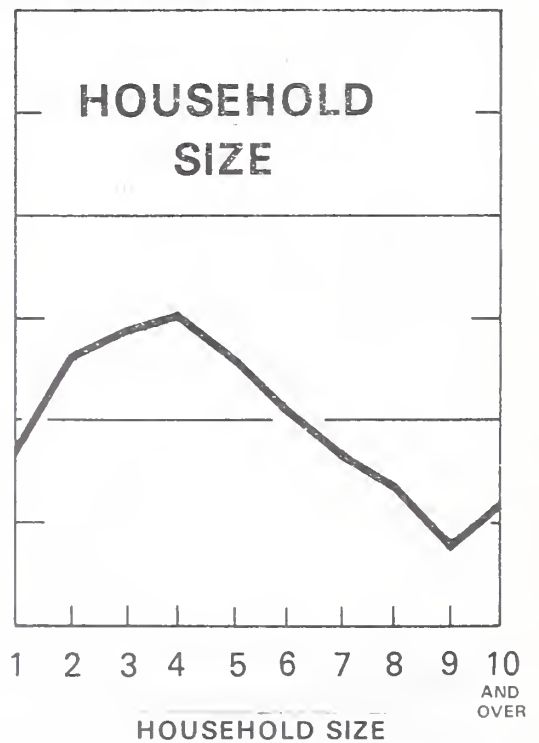
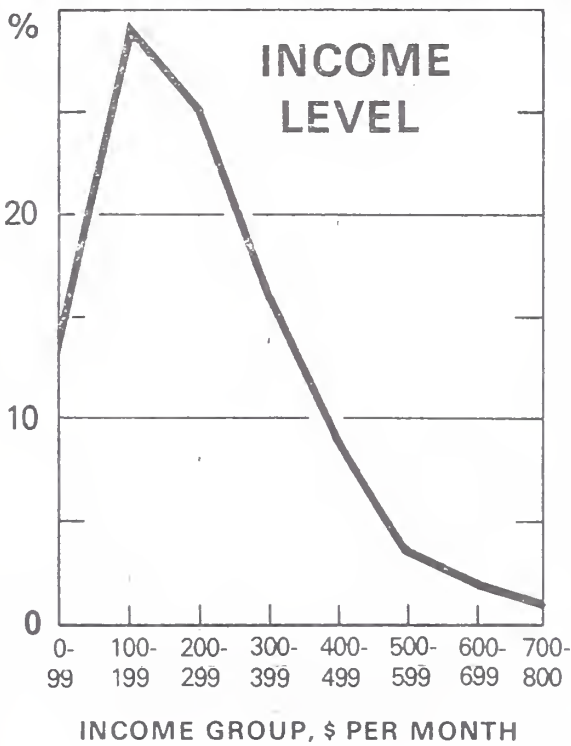


USDA

MIDDLE-OF-INCOME RANGE DATA USED.

NEG. FNS 22-75 (9)

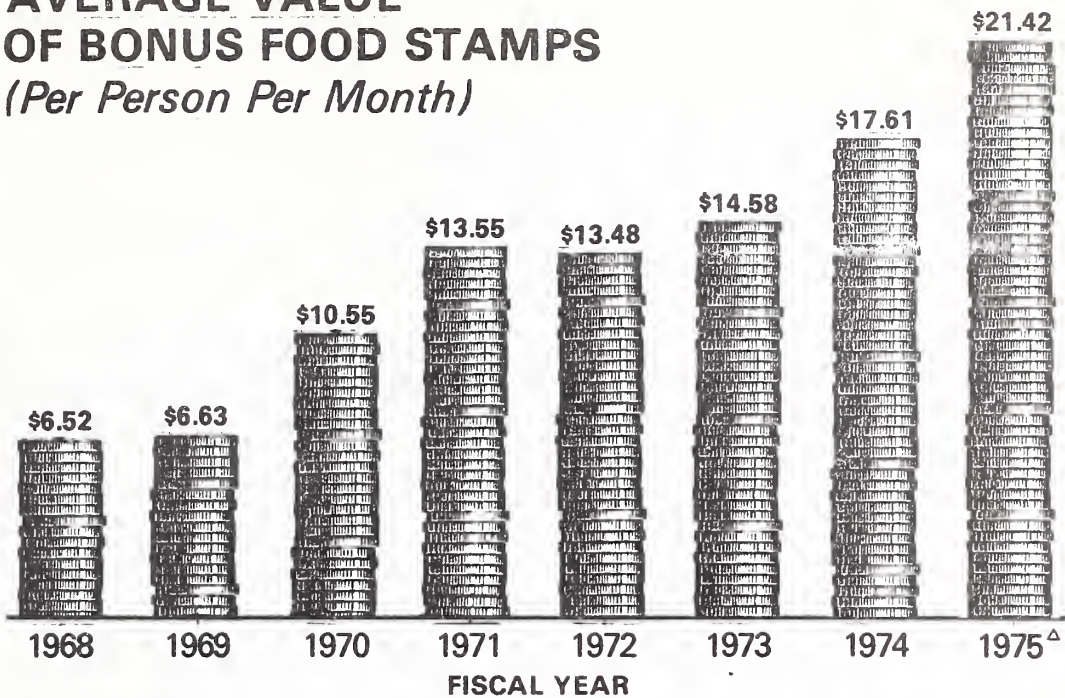
FOOD STAMP PARTICIPATION



USDA

NEG. FNS 27-75 (9)

AVERAGE VALUE OF BONUS FOOD STAMPS (Per Person Per Month)

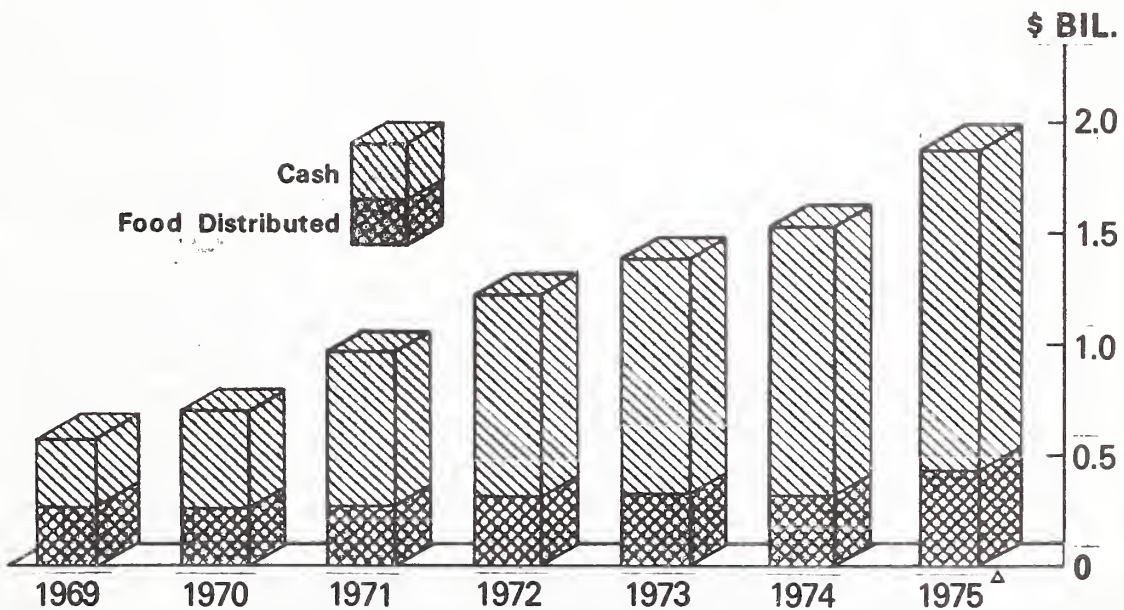


^Δ PRELIMINARY.

USDA

NEG. FNS 7-75 (9)

USDA CONTRIBUTIONS TO CHILD NUTRITION PROGRAMS



^Δ PRELIMINARY.

USDA

NEG. FNS 25-75 (9)

AGRICULTURAL OUTLOOK FOR 1976: A CONSUMER RESPONSE

[By Aileen Gorman, Executive Director, National Consumers Congress]

In the past three years retail food prices have escalated almost 40%. Most Americans have tasted the bitter effects of food inflation, and it is anticipated that in the first half of 1976, consumers will have to swallow another four to five percent.

Some economists today report that the period of double digit inflation is over, that the battle against recession has been won, and that the days of stable economic growth are just around the corner. Yet, no one can ignore the harm or forget the damage that the recent inflation has inflicted on a large number of people in our society.

Inflation in food is different from inflation in all other consumer goods. It affects the lives of people in many ways; it eludes almost no one. Millions of Americans have been forced to readjust their lifestyles and seriously alter their food consumption patterns. The burden of inflation has been severe on the poor, the elderly, the handicapped—on all those who are living within the confines of a fixed income. A survey recently completed by the National Consumers Congress found that low income consumers are spending an average of 53% of their total income on food. In spring, 1975, a low income marketbasket cost 90.3% more than it did ten years ago while the average consumer's marketbasket cost 77.5% more (according to the Bureau of Labor Statistics). Items such as dried beans and cabbage which have traditionally been staples in the low income diet, have more than doubled in price. 45.7% of the respondents in the survey reported that they are eating somewhat differently than they were eight or ten years ago. Most of these said they were eating less quality and quantity of food in general, specifically, eating less meat, less fresh fruits and less fresh vegetables.

The statistics are shocking, yet they are substantiated over and over again. USDA figures support the claim that lower income people are spending at least half of their income on food, and also show that per capita food consumption in 1975 fell more than one percent to the lowest level in seven years. The Senate Select Committee on Nutrition has found that while the diet of the poor is deteriorating, the poor are spending up to 60% of their income on food.

The food stamp program, specifically designed to relieve some of these pressures, falls directly under the auspices of the USDA. It is through this program that the Department could play a crucial role in relieving hunger in America. But, unfortunately, the program has become characterized by minimal or non-existent outreach, a lack of adequate public education and information, and an oppressive procedural maze which is both time consuming and degrading to those who apply.

As originally conceived, the food stamp program was designed to meet the nutritional needs of the low income group. But, according to the Select Committee on Nutrition, the program as it stands today, fails to provide low income families with a sufficient number of stamps to purchase a nutritious diet.

There are presently 20 million Americans receiving food stamps. Several million of those are the "newly unemployed" who are suffering the recent effects of inflation. Another 25 to 30 million Americans are eligible, but have not applied because they either could not meet the sizeable cash outlay required to pay for the stamps, or have not received information on the existence of the program. In short, the ineffective administration of this program has caused undue suffering to millions of low income people.

It is unfortunate that in recent months, this program has become a political scapegoat to conceal the lack of adequate economic planning on the part of the Administration. There are those in Congress and in the Department of Agriculture who feel that this program should be substantially reorganized. Given the problems that currently surround the program, we agree with that view. We also recognize the difficulties in reorganizing and administering a program of this magnitude. But, in any reevaluation that takes place we strongly urge USDA to carefully assess the following:

- (1) The high cash outlay required to pay for the stamps;
- (2) The inexcusable lack of outreach in bringing food stamp information to the poor;
- (3) Ineffective distribution mechanisms which make it virtually impossible for many to receive the stamps;
- (4) The extensive time gap between application and qualification; and
- (5) The need to provide a sufficient amount of stamps to purchase an adequately nutritional diet.

Lastly, and perhaps most importantly, the USDA should insure that the motivating forces behind such a restructuring are humanitarian and not merely monetary.

The powers of the USDA are broad and multi-faceted. They are involved in every step of agricultural production from planting to exporting. While production is of paramount importance to the Department, it is crucial to realize that the consumer is ultimately affected by everything the Department does. Given this fact, the Department cannot afford to focus on consumption to the exclusion of consumers. To successfully carry out its mandate, new and better networks of communication and information must be opened to the consumer. Until now, consumers have had to force those lines of communication and fight to have their opinions heard. USDA does have an assistant to the Secretary for Consumer Affairs, yet we question the extent to which that office is taken seriously. For example, the beef grading issue alone has taken both USDA and consumers from the conference table to the courtroom. When consumers and the Consumer Affairs office outlined the need for grading standards which would clarify the differences between "choice" and the admittedly desirable lean, shorter fed beef, the Department ignored the request, concentrating instead on manipulating consumer demand by redefining "choice"

and "good" grades. This solution fails to provide consumers with information they need to decide which kind of meat they want to buy.

While we welcome the support of the USDA Consumer Affairs office on the beef grading issue, we feel that all too often, the priorities of that office get bogged down in "cosmetic" and less controversial areas. This strikes a great contrast with the growing number of local consumer groups who are tackling the more complex and controversial questions inherent in the modern marketplace.

In the international arena, the last few years have ushered in a critical change in our agricultural profile. For the first time in over a decade we were faced with a grain shortage. Instead of having to manage a constant surplus, we witnessed a serious depletion of reserves and new heavier demands from underdeveloped and developed nations. Both factors have placed this country in a more tenuous position than ever before. In response to this position, the Department often cites bad weather and natural disasters as the major cause for price fluctuations. Although these factors are indeed important, to say such fluctuations are primarily a product of bad weather is to suggest an abdication of responsibility for long range planning.

When faced with new challenges from the marketplace, the Department's solutions are largely based on political expediency rather than sound economic planning. Responsible consumers have been demanding a long range plan for at least three years now. USDA's insistence on maintaining the image of a "free market" has brought us the extended meat price ceiling, the soybean embargo and the halted grain shipments—all of which have wreaked havoc on consumers and producers. It is unfortunate that because the Department has been so remiss in their planning that they had no alternative but to accept such stopgap measures time after time. The time has come to change that approach.

Long range planning would provide us with a sound method for export management, which in the long run, would enable us to rebuild and maintain an adequate level of reserves. With our reserves now all but depleted, it would be impossible to rebuild these reserves without establishing a firm export policy as well.

Maintaining reserves insures stable prices for consumers and stable markets for producers. It also acts as a buffer against the present boom or bust mentality. The effective use of reserves in time of shortage or other disasters could ultimately reduce the necessity for government intervention in international markets. Furthermore, reserves could safeguard producers and consumers against volatile and devastating price fluctuations.

We believe that a sound system of export management is also essential to prevent the price disruptions created by the major foreign buyers and large domestic grain companies. The recent arrangement with the Soviet Union has been a small step in that direction. Unfortunately, it was not the product of long range planning, and thus heralds no hope of being a continuing policy. Moreover, an arrangement with only one nation when other new buyers appear ready to enter the market, does not suffice as sound economic planning.

In the area of milk marketing, long range planning is also essential. But, long range planning must not be confused with the existing morass of regulations. In milk marketing especially, the Department

should reexamine whether the complex web of administrative pricing serves the purpose for which it was originally intended, or whether it has come to be manipulated by the industry and for the industry.

We believe that the role of the USDA in milk is myopic and self-protective. In the midst of a rapidly changing market, slide rule adjustments of parity and econometric wizardry provide temporary solutions for ailing market conditions. The soundness of the system of price levels and supports is rarely questioned. But changes in the market cannot go unnoticed forever. Large drops in consumption and a sharp decrease in the number of dairy farmers over the last few years are symptomatic of the inadequacy of the present system.

In 1972, the Milk Pricing Advisory Committee, chaired by former Farmer Cooperative Service head Dr. Ronald Knutson, concluded that the present system is anachronistic due to changes in technology and market control and is in need of major revisions. To this end the National Consumers Congress strongly urges the USDA to support the following changes:

(1) That the Federal Market Order system be retooled to reflect the fact that we are moving toward a single class of milk. This would require amending the Agriculture Marketing Agreement Acts and mandating the Secretary of Agriculture to develop new pricing mechanisms which reflect modern market conditions.

(2) That the USDA should support amendments to the Capper Volstead Act which would redefine the anti-trust exemptions to achieve the following objectives:

(A) That cooperatives be maintained as moderate sized marketing entities large enough to take advantage of modern marketing techniques but not so large as to monopolize major regions of the country.

(B) That cooperatives be structured so as to maximize farmer welfare and control.

In conclusion, I feel it is absolutely necessary to mention the inequality between the production and marketing system and the consumer. On one end of the spectrum we find large agribusiness corporations and super cooperatives controlling vast market areas, while on the consuming side, is the individual citizen trying to make a sound economic purchase.

The basis of the free enterprise system hinges on the belief that every time consumers make a purchase, they are voting on what is produced. But, as the market stands today, it is industry and government who determine what will be on the ballot. The burden of reading the fine print—often written in industry's special brand of invisible ink—is still squarely on the consumer.

Changing this inequality in the realm of agriculture means developing new and more effective mechanisms for consumer input. This very same recommendation was made by the Agriculture Department's own Young Executives Committee in 1974. I quote:

Only by satisfying consumer needs can farmers maximize their return in the long run. It is frequently argued that the best way to assure plentiful food supplies and reasonable prices is to maintain a prosperous agriculture. If this argument holds, then agriculture will fare better under a national food policy than under a separate farm policy.

AGRICULTURAL INPUTS AND PRODUCTIVITY

OUTLOOK FOR PRICES AND SUPPLIES OF INPUTS

[By Robert D. Reinsel, National Economic Analysis Division, Economic Research Service, USDA]

In 1975 the farm production sector relied on the nonfarm sector for over 60 percent of the inputs used in farm production and the importance of these inputs is increasing. Because of this and because of the rapid changes occurring in the farm sector, events occurring in the input manufacturing sector can dominate and substantially change the cost structure for farm firms. In the longer run, farm input prices and supplies affect the price of food and fiber delivered to consumers. In order to put the input situation in perspective and discuss the outlook for 1976, it is necessary to review a bit of history and then contrast that with the current situation.

From mid 1971 to April 1974 prices of farm inputs were subject to some form of price control. In addition, world prices for inputs rose above the controlled domestic prices and prices of raw material going into the manufacture of inputs rose. With domestic margins reduced, many manufacturers turned to world markets or cut production or both. Prices of fertilizer were freed from control in late 1973, but the oil embargo in late 1973 and limited availability of natural gas in interstate pipelines created additional problems for manufacturers, particularly manufacturers of pesticides and fertilizer, throughout 1973. As prices were held down, shortages began to appear and, with the removal of price ceilings, prices for farm inputs increased rapidly.

In addition, the movement to a free market situation with respect to feed grain and the sharp increase in export sales caused farmers to expand production and increase planted acreage sharply. This increased demand for farm inputs pushed against very short supplies. The resulting sharp price increases and actual physical shortages set the tone of the input situation in 1973 and 1974.

In 1975, although input prices continued to rise, physical shortages or absolute unavailability of major inputs did not occur.

You heard yesterday that net farm income for 1975 is expected to total about \$25 billion, the third largest on record. You also heard exports are expected to remain strong and that commodity prices, while declining slightly, point to favorable income in the first half of 1976. In addition, although interest rates are high relative to historical standards, farmers have been able to greatly expand the volume

of funds borrowed. These factors thus suggest a strong demand for inputs as all-out production continues into 1976. From the farm side at least, the market for all inputs remains strong.

Fertilizer prices dropped sharply between April 15 and October 15, 1975. The farm price of anhydrous ammonia and urea each declined 17 percent to averages of \$219 and \$203 per ton. Concentrated superphosphate declined from \$214 to \$179 per ton and muriate of potash (K_2O) prices dropped from \$102 at the farm to \$94 or about 8 percent. With the exception of potash, prices for most fertilizer products are now below prices paid in September 1974.

For the year ended June 30, 1975, total consumption of fertilizer materials dropped 10 percent below 1974 and 2 percent below the amount shipped in 1973. Consumption of primary plant nutrients was down 9 percent from a year earlier. Nitrogen consumption decreased 6 percent to 8.6 million tons, phosphate usage dropped 12 percent to 4.5 million tons, and potash was down 13 percent to 4.4 million tons. Not since 1956 has total use of N, P, and K dropped from 1 year to the next.

Phosphate usage fell to the lowest level since 1968. Both nitrogen and potash dropped below the levels of 1973 and 1974. The decline in use was more dramatic than expected. However, as early as March 1975, farmers were reporting that they intended to reduce application rates in 1975 in response to rapidly rising fertilizer prices and planned to reduce use of both phosphate and potash which, in effect, can be mined for a year or 2 from residuals of previous applications before crop yields are seriously affected.

While use declined, production increased from the previous year and at year's end, inventories of nitrogen products were at record highs at the manufacturers' level. In addition, the spread between consumption and net domestic shipments widened so that additions to inventory in the pipeline between the producer and the farmer probably exceed 650,000 tons of N, 400,000 tons of P_2O_5 and 200,000 tons of K_2O at the end of June this year. Including the buildup in inventories, the supply of N for fertilizer in 1974/75 exceed 10.5 million tons. With the buildup of inventory and with capacity to produce anhydrous ammonia increasing by half a million tons in 1975/76, the domestic supply could exceed 11 million tons for the crop year. If they operate at 90% of capacity and if industry takes its normal share.

The anticipated loss of 550,000 tons of nitrogen due to curtailment of natural gas production would not be sufficient to bring production into balance with demand at current prices.

In order to bring expected supply and consumption in line with historical patterns, nitrogen use will need to increase by more than 2 million tons over that used in the past crop year and nearly 1.4 million tons over the 1973/74 consumption level.

Fertilizer prices are falling. As a result, use probably will pick up, particularly if prices decline to their April 1974 level or lower by next spring.

If resistance to current price levels continues in the face of high inventories at all levels of the industry, further price declines are in store for nitrogen and phosphate materials.

Capacity to produce wet process phosphoric acid, the basic P_2O_5 source for the production of high analysis phosphate fertilizers, has

grown and will continue to grow in the immediate future. By the end of this year, capacity will be near 8.8 million tons P_2O_5 , 1.9 million tons above the 6.9 million ton capacity available in January 1975. Thus, production capacity for phosphoric acid alone will exceed 1974/75 domestic use and net exports by approximately 1.7 million tons and 1973/74 by 1.5 million tons. With larger inventories and considerable excess capacity, probably will decline and downward pressure on prices will continue.

Capacity to produce potash fertilizer in the United States is about 3.4 million tons K_2O a year. However, domestic supply, corrected for inventory changes, has not exceeded 2.6 million tons or 76 percent of current domestic capacity. Domestic production has been about half of domestic use with the gap being filled by imports virtually all from Canada.

The Canadian potash situation remains unsettled and this could result in problems for U.S. farmers in the future. However, no major difficulties are anticipated for 1976.

FARM MACHINERY

The supply of farm machinery appears to be catching up with demand for many types of equipment. January–August sales of farm wheel tractors were down 17 percent from their level of a year ago. Data for the same period also indicate a considerable weakening of demand for many types of haying machinery, including mower conditioners, windrowers, and balers. Combine demand, however, remained strong, as it appeared that farmers were preparing for large harvests of corn and other grains. January–August sales of self-propelled combines were up 13 percent from their 1974 level.

Accompanying the slowing of demand for some types of machinery has been a rebuilding of inventories from their severely depleted levels in the past 18 months. Stocks of wheel tractors ready for sale have increased from 49,000 in December 1973 to nearly 61,000 in August 1975. With the continued strong demand for combines, however, stocks have not increased as rapidly. Nonetheless, the August 1975 level was 12,000 units, compared with 5,200 in December 1973 and 5,600 in December 1974. Overall, inventories of machines ready for sale should return to normal levels by the end of 1975 or early 1976.

The behavior of farm machinery prices has been similar to other price indicators for the economy as a whole. Through early 1974, increases in the wholesale price index (WPI) for agricultural equipment generally led retail price increases by approximately one quarter. However, as the tight supply-demand situation began to manifest itself in depleted equipment inventories and as the overall rate of inflation increased, movements became more parallel, quarter by quarter. The most dramatic increases occurred in the 12 months ending December 1974, during which the WPI and prices paid index for farm machinery (PPI) each increased 24 percent.

A steady reduction in the wholesale price index for agricultural equipment through September has indicated a likely slowing as well in prices paid by farmers for their machinery. A similar observation has held for one component of the index, farm wheel tractors. The September WPI for all agricultural machinery and equipment was

up 11 percent from its level a year before, and that for wheel tractors was up 10 percent. In the comparable 1973-1974 periods, indexes rose 22 percent and 24 percent, respectively. Although there appears to be likely a continued slowing of the rate of increase of prices paid for farm machinery, as indicated by a relatively flat rate of increase of the WPI through September, a significant jump in the index for wheel tractors in October (and a lesser increase in the index for all agricultural machinery) portends further increases in retail machinery prices.

FUEL

Fuel supplies are adequate for farming operations throughout the country. There have been no reported shortages of fuel as farmers are harvesting record acreages of crops. However, the price of gasoline is up over 8 percent from the fall of 1974, and is at an all-time high. Diesel fuel prices averaged 12 percent higher than a year ago and slightly higher than the seasonal price peak in December.

As a result of the higher prices and a strong conservation effort, total demand for petroleum products in the U.S. during the 4 weeks ending October 17 averaged 15.8 million barrels per day, 7.2 percent less than the same period in 1974 and 9.4 percent below the 17.4 million bbls. per day at the start of the embargo in 1973. Since 1973, total U.S. population increased by 3 million persons. Therefore, people are really conserving energy.

The overall fuel supply outlook is good. Gasoline and diesel fuel supplies are plentiful. However, natural gas problems exist for much of the country and these impacts on LP gas supply as 70 percent of LP gas comes from processing natural gas. Fortunately we have had a nearly ideal fall harvest period and less LP gas than normal is needed for drying the huge corn crop. This warm fall also enabled public utilities and industries to function without having to substitute much LP gas for natural gas.

Farmers powering irrigation pumps with natural gas have been concerned about a Federal Power Commission ruling that downgraded irrigation pumping priority from category 2 to category 3. The effective date of the FPC order has been deferred, however, until June 15, 1976 or until the case has been adjudicated by FPC, whichever is earlier. Shifts to other fuels will significantly increase the cost of pumping water as alternative fuels are far more costly.

Most petroleum fuels will be plentiful for farming operations. Reduced nonfarm demand has caused prices to soften somewhat. Some retailers have dropped gasoline prices 1 to 2 cents per gallon in the past month. We anticipate no major increases in fuel prices over the next several months. However, Congress has yet to complete the comprehensive energy legislative package. With emergency petroleum price and allotment controls expiring on November 15, is possible that increases in petroleum prices could occur. However, with reduced demand, this does not appear likely.

PESTICIDES

The production of pesticides was up an estimated 10 percent from a year ago and overall demand was relatively unchanged. Thus, sup-

plies of most pesticides were adequate for 1975. Although production was up, low beginning inventories, as well as difficulties in scheduling distribution, caused spot shortages of some pesticides. While some shortages of herbicides and insecticides for application at or previous to planting time were reported, growers in most sections of the country were able to obtain adequate supplies of most materials later in the season. Price rises were substantial from 1974 to 1975. Formulated pesticides reportedly were costing 20 percent more than last year when the increase was 10 to 15 percent.

Producers indicated that a number of factors were still limiting pesticide output in the first half of the 1975 production season, but production problems eased considerably in the second half of the season. Formulation problems in 1975 were considerably fewer than in 1974 with limited capacity relatively more serious than shortages of raw materials. Since many formulators have small operations with low margins and little reserve capital, they are quite concerned over the increasing costs of production.

Distributor inventories of pesticides were reduced by more than 50 percent in 1974. On the demand side, cuts in pesticide use on cotton in 1975 were offset to some extent by other more intensive uses, particularly of herbicides on certain crops.

Prospects for 1976 indicate a further improvement in the pesticide supply situation with adequate supplies expected for most pesticides. Some production capacity was added last year and more is planned or underway. Much of this was expected to be onstream for 1976. Twenty-one of 29 firms surveyed recently were expanding or planning 49 capacity expansions, including 13 for fungicides, 18 for herbicides, 13 for insecticides, and five for other pesticides. In addition, the raw material availability situation is expected to cause few problems.

The inventory situation is reported to be improved over last year. Carryover is expected to be greater with inventories closer to normal for the 1976 season.

Prices are expected to hold steady or increase only slightly in 1976. The overall price increase may be about 5 percent.

Continuing strong demand, particularly for herbicides, is likely to result in rates of increase in pesticide use in 1976 about the same as in 1975.

LABOR

In 1974 average annual hired agricultural employment was about 1.3 million. However, over 2.7 million persons did some agricultural work for wages during the year. But only about 800,000 or less than one-third, depended primarily on agricultural wage employment for their livelihood. Persons chiefly dependent on agricultural employment have increased by about 200,000 since 1971 but this number is expected to remain at or near current levels through 1976. Most persons with wage employment in agriculture are under 25, and about 40 percent are students. Youths and students have played a continually increasing role in the hired agricultural work force since the early 1960's. Although the increasing trend has moderated in recent years, youth who have no long-term commitment to the agricultural labor force will continue to provide the bulk of future short-term seasonal agricultural labor inputs.

Major changes in the use of hired labor inputs have occurred over the past decade. In the South, the number of long-term agricultural wage workers (workers employed 6 months or more) declined by about 100,000 and short-term seasonal workers (workers employed less than 3 months) declined by over 700,000. But Western and North Central regions all used more hired labor inputs in 1974 than in 1967. However, almost three-fourths of all hired employees in the North Central region work in agriculture for less than 3 months and family labor still provides about three-fourths of all labor inputs. The proportion of short-term seasonal workers drops to about 55 percent in the Western States. Hired employees account for 70 to 75 percent of the total labor force in this region. Peak seasonal planting and harvesting labor needs have steadily increased in the North Central grain States as a result of increased crop specialization and increased acreages brought into production during the past few years. By contrast, the longer growing season and more diversified agriculture of the Western States enables employers to offer greater opportunities for full time employment.

The 1975 U.S. average wage rate for workers not receiving room and board is estimated at \$2.65 per hour, up about 16 percent from 1974. Thus agricultural wage rates have almost doubled since the sector first became covered under federal minimum wage legislation in 1967. Although this percentage increase is greater than increases experienced by the total private sector, the absolute hourly wage spread between the agricultural and nonagricultural sectors actually increased by 73 cents.

The overall demand situation for hired labor inputs in 1976 is expected to be similar to 1975. Easing of inflationary pressures and continuation of high nonagricultural unemployment will have a moderating influence on wage increases in the coming year. The major upward pressure will result from an increase in the agricultural Federal minimum wage to \$2 per hour beginning January 1, 1976. This suggests that hourly wage rates will be up 8-11 percent over levels prevailing in the current year.

COST OF PRODUCING AGRICULTURAL COMMODITIES

[By John G. Stovall, Associate Director, Commodity Economics Division,
Economic Research Service, USDA]

One of the surest ways of getting a lively argument started among farmers, extension specialists, economists, or perhaps even participants at the National Outlook Conference is to cite an estimate for the cost of producing an agricultural commodity. Despite the attention given this subject, both at the theoretical and empirical level since the beginning of agricultural economics and farm management, most of the conceptual and procedural problems encountered in the early attempts to estimate cost of production still exist today. There is general confusion about appropriate cost concepts, a lack of standardized cost accounting procedures, and inadequate data to make precise measurements of cost components. Thus, it is not surprising that men of good will and honest intentions may arrive at different estimates of production costs.

The process of calculating the cost of producing a commodity at first glance appears deceptively simple. Obtain prices for all inputs used in production; multiply the prices times the quantities used; and sum. But, consider the range in the total you can obtain depending upon how you elect to treat problems, such as:

- What price do you use for the services of one acre of land for one year? Do you use the prevailing cash rental rate, the current market price times current interest rate (an opportunity price), or the acquisition cost times an interest rate? Do you adjust for appreciation in land values?
- How do you allocate joint costs and total farm overhead? Do you allocate these proportionally to the value of the product, the quantities of inputs used, or use some other method?
- How do you price operator and family labor? Do you use prevailing farm wage rates? Do you use skilled trade labor rates? How do you price the managerial services of the farm operator whose management decisions are as complex as those of many business executives?
- How do you price the services from one year's use of durable inputs such as farm machinery, equipment, and buildings? Do you use an acquisition cost basis, a present market price basis, an expected replacement cost basis, or compute a traditional depreciation charge?
- How do you price farm-produced inputs such as feed for a livestock enterprise? Do you use a current market price at which you could sell the feed (the opportunity concept) or do you use the farm cost of producing the feed?

I think it is immediately obvious from what I have just said that there is no single cost of production estimate which is correct to the exclusion of all others. There is no one conceptual basis or computational procedure that is more valid than another. It is likely that all of the ways of calculating production costs are legitimate—but *legitimate and appropriate for a specified purpose*. Cost of production figures are used (and misused) by many people for many purposes but the appropriate concepts and procedures must be selected with the end use clearly in mind. Some of the frequent uses to which production cost estimates are put are the following:

- Farm Planning*.—Production cost estimates along with product prices are a necessary part of the budgeting process in determining the most profitable enterprise mix for a farm. Cost estimates are useful in making farm management decisions not only in planning but throughout the production cycle—how much fertilizer to apply, when to sell, when to buy, etc.
- Deriving a rate of return on equity capital*.—A farmer like any other businessman needs to know the rate of return on his capital investment. In public corporations this is a staple indicator demanded by stockholders and the efficient farm operator holds it in equally high esteem.
- Income tax*.—Proper record keeping and accounting procedures for determining costs and income are essential to the efficient management of the modern farm business to ensure proper timing and amounts of tax payments.
- Efficiency measures*.—Cost data for each farm enterprise are necessary information from which to evaluate overall efficiency of resource use on a farm. It is also useful to researchers on a more aggregative level for evaluating efficiency of total resource usage in the production sector. This evaluation is often useful in identifying inefficiencies in the production system and directing research specifically designed for the solution of such problems.
- Public policy*.—Public policymakers are using production cost data in their deliberations with ever increasing frequency. They use them in assessing the economic health of the various sectors, in evaluation of proposed policies and programs, and in adjusting parameters of existing programs. Remembering the lack of a general understanding of production costs concepts, their increased use may pose additional problems. Congress is apparently coming to the opinion that the parity concept, the mainstay of agricultural policy for 40 years, is obsolete. Its acceptability to the public has diminished and new criteria are being sought as a basis for agricultural policy. There is reservation in the minds of many about the appropriateness of cost of production for this role. These reservations include the conceptual problems I noted earlier, plus the question of the best measure of what price “should” be. A current notion often suggested is to determine production cost for agricultural products and equate product price to it, thus achieving the ultimate in equity and resource allocation. There are serious objections to this notion, even if production costs could be measured precisely, not the least of which is the induced inflexibility in supply response to changing demand conditions, and the problem of a cost-price spiral. I think

it is clear to this audience that costs calculated by any specific manner will not serve all of policymakers' uses equally well. An enormous amount of confusion and misinformation has been generated because the appropriate cost concepts were not used or not well understood. And, we may well expect more of this controversy in the coming months.

COST CONCEPTS

Perhaps the picture painted thus far is too pessimistic and leaves the impression that near total confusion reigns. In an effort to provide a more balanced perspective, I will try to briefly summarize some of the most important concepts and where their use is most appropriate. Since variable costs (costs of the services of production items consumed in one production period) are reasonably straightforward, I will confine my discussion to the *services of durable inputs*—those whose production life extends over several production periods. The problem of durable inputs has two dimensions: The first is assignment of an appropriate value base for the input and the second is the allocation of this value or cost base through time. Some alternative concepts are:

(1) Value the durable inputs at *acquisition cost* and distribute these over the useful life of the input. This is the commonly understood notion of depreciation. In the case of land, an annual interest charge on the investment may be substituted. This concept perhaps has its greatest usefulness in measuring rates of return on investment, *ex post*. It is not particularly useful in making current resource allocation decisions, because the value of these resources change over time.

(2) Value the durable input at *current market price*. This concept is most useful to the individual in making current investment decisions and decisions about changes in the farm organization. However, the variability of market prices renders the usefulness short lived. Even after adopting the current price for land and machinery, a procedure for imputing a value of the service for 1 year must be selected. In the case of land, the cash rental market may best reflect this on an annual basis. But, for machinery, cash rental rates are not common nor available in all areas of the country. The depreciation schedule should reflect the cost of replacing the machine when it is used up or salvaged.

(3) Value durable inputs at their *next best earning opportunity in farming*. This concept embodies the opportunity cost notion and has been widely used in farm management analysis. It has little use outside the individual farm business.

(4) Value durable inputs at their *nonfarm opportunity cost*. This notion, also widely used in farm management analysis, assumes that land and buildings seldom have any profitable use outside of agriculture. To the extent that this is true, they are in effect "free resources" to agriculture and the problem is to find their most efficient use in farming. The market price of land is irrelevant to this particular problem. This concept probably best serves to answer questions such as, "now that I have my farm, what is the most profitable use to make of it?" Or in the aggregate, what is the most efficient use of farmland in the U.S.?

Let me repeat an earlier refrain—no single one of these concepts is the “correct” one. Each is appropriate for certain uses and must be selected with a specific use in mind.

WHAT ERS IS DOING

Despite the many difficult problems cited above, I believe that progress is being made on several fronts to clear up the confusion surrounding cost of production and to develop cost data better suited to a particular end use. Most States are actively working to improve their data and we are cooperating with them both formally and informally.

Firm Enterprise Data System

About 3 years ago, soon after the ERS reorganization, the newly-created Commodity Economics Division began making plans to improve cost of production data. We realized the task was enormous and that it would take several years to complete. After considerable planning, we made the decision to establish a Firm Enterprise Data System centered around a budget generator system developed at Oklahoma State University. FEDS, as this system has become known, is a cooperative effort with the Department of Agricultural Economics at Oklahoma State, designed primarily for research purposes, although it has many additional uses. The main components of the system are:

- (1) Farm and ranch enterprise budgets.
- (2) Whole farm budgets.
- (3) Processing and marketing firm budgets.

The first component is already well underway, the second is well along but not operational, and the third is still in the planning stage.

The enterprise budget system utilizes a computer to process input data into completed enterprise budgets and to facilitate storage and updating.

The key to the usefulness of the FEDS lies in: (1) the standardized set of procedures used in developing budgets and (2) the computer software to make changes and modifications in budgets. With the standardized set of budgeting procedures, cost estimates can be developed which are comparable across commodities and across regions. With the data stored on a computer and the computer programs available, these budgets can be updated annually and can be modified for particular uses. Although the basic FEDS budgets follow the concept of pricing resources at current market values, the key design feature is its ability to change assumptions and the concept to fit a particular use.

Presently, we have approximately 900 crop budgets in the system. They represent most of the production regions in the U.S. for major crops such as wheat, corn, grain sorghums, soybeans, oats, cotton, rice, peanuts, and sugarbeets. Included also are budgets for 50 specialized crops, e.g., potatoes, tomatoes, sugarcane, hay, pasture, and silage. Livestock budgets are currently being developed and we expect to have approximately 200 of these on the system within the next year. It is anticipated that the *basic or core set* of budgets will eventually total about 1,500–2,000 crop budgets and 500 livestock budgets.

As soon as the system is fully operational we plan to generate an annual output as follows:

- (1) Final historical budgets for the previous year.

- (2) Preliminary budgets for the current year.
- (3) Projected budgets for the coming year.

Current plans are for the first such output to be available in February 1976 and in subsequent years, we would like to generate this information by late fall.

The second component of FEDS, the whole farm budgets, will attempt to simulate typical farming situations in the major farming regions across the country. About 50 such typical farms are currently planned. The whole farm budgets will also be useful to us in analyzing the impact of various policies and programs in the net income of typical farms.

Although FEDS is still somewhat in its infancy, it has generated a lot of excitement and interest both within ERS and across the country. Demands for its use have already outgrown the resources originally planned.

Cost of Production Surveys

Not long after we decided to move ahead with FEDS, the 1973 Agriculture and Consumer Protection Act was enacted which directed the Secretary of Agriculture to conduct cost of productions studies for wheat, feed grains, cotton, and dairy commodities. Several months later the Congress appropriated funds with which to conduct this study. Since FEDS was not far enough along to provide us with the cost estimates necessary to comply with this Act, and since we needed more current farm data, an enumerative survey was designed to collect the basic information needed to comply with this Act for 1974.

Subject to the availability of funds we plan to conduct a benchmark survey every 4 or 5 years on a rotating basis for each of the major agricultural commodities. We are already making plans to conduct a survey of beef cattle, hog and sheep producers in early 1976. Data from this survey will be used to refine and update budgets for producing meat animals and should give us sufficient information on the structure of this sector in order that we may attach weight to the various systems of production. The plans for future years call for similar surveys on tobacco, fruits, vegetables, sugarcane, sugarbeets, and poultry.

This survey information will also be integrated into FEDS and will be used to update technology and other coefficients providing much improved base year data. In future years between surveys, FEDS will update these production costs in compliance with the 1973 Act. Updating will be primarily through changes in prices of both the inputs and products.

COST ESTIMATES AND PROJECTION

Now I would like to review with you some of our estimates of trends and projections relating to cost of production. I will use 1973 as a base and talk about percentage changes since that year, including preliminary estimates for 1975 and projected for 1976.

This has been a period of unprecedented increases in farm input prices, particularly those related to energy. You have just heard a presentation by Dr. Reinsel, in which he has discussed the cost situation by major input categories. I will not try to duplicate that presentation and will focus more on major crops.

Perhaps the most widely used general measure of farm cost is the index of production items, interest, taxes and wage rates. Since this

index is the basis for adjustments in target prices under current legislation, it might be useful to examine changes in that index since 1973 (table 1). In 1975 this index will average about 27 percent above 1973 and projections for 1976 indicate a modest increase to 31 percent.

The use of this index in adjusting target prices has been widely criticized because it does not reflect very well changes in input costs for major crops included in farm legislation. Legislation has been introduced to modify that provision. One proposal has been to exclude feed and feeder livestock from the series as those two items are for the most part unrelated to the cost of producing major crops. Also, since 1971 changes in prices paid for feed and feeder livestock have differed from the changes in prices paid for most items used in crop production. Prices paid for feed and feeder livestock increased much more than other items from 1971 to 1973 and declined after 1973 or 1974. However, the large increases paid for most items used in crop production occurred after mid-1973: Feed and feeder livestock have a weight of 29 percent in the overall index. If these two items are removed from the index of production items, interest, taxes and wage rates, the increase from 73 to 75 would be about 38 percent instead of 27 percent and the projected increase from 1973 to 1976 would be about 47 percent instead of 31 percent (table 1).

Next, I would like to discuss some estimates of the cost of producing some of the major crops over the same time period including projections to 1976. These indexes are based on our estimate of variable cost of producing these enterprises and avoids many of the problems and pitfalls discussed earlier since land and overhead cost are not included.

Except for soybeans our estimates of the percentage increase in variable cost per acre of producing the major crops is greater than the increase in index of prices paid for production items, interest, taxes and wage rates with feed and feeder livestock removed over the period 1973-1976 (table 2). The projected increase from 1973 to 1976 ranges from 59 percent for cotton and 73 percent for wheat. The main reason for the larger increase in variable cost of producing major crops is that fertilizer and motor supplies, which have increased more than other items, carry a heavier weight in crop production than in the overall index.

Variable cost of producing soybeans increased about the same as the index of prices paid for production items, interest, taxes and wage rates with feed and feeder livestock excluded. There are two main reasons variable cost of producing soybeans increased less than the other major crops. First, prices paid for soybean seed were unusually high in 1973 and second, generally less fertilizer is used on soybeans than on the other major crops.

Variations in yield have a major influence on per bushel costs and this measure shows much more instability than per acre costs. The two levels of projected yields for 1976 demonstrate this effect (table 2). Variable cost per pound of producing cotton increased substantially more than the cost per acre. This is largely because the 1973 yield of cotton was above trend and the second highest on record. Yields were below trend in 1974 and 1975.

Grain sorghum and wheat variable cost per bushel have also increased more than costs per acre. However, the difference for wheat is not as great as for cotton and grain sorghum (table 2).

For corn per bushel costs in 1974 and 1975 increased more than per acre costs. This is due to below average yields in both years. For 1976, cost per bushel will be dependent upon the yield per acre. If yield is in the upper part of the range, cost per bushel will decline; but if yield falls in the lower part of the range, cost per bushel will increase further.

For barley, low yields in 1974 resulted in a much larger increase in per bushel costs than in per acre costs from 1973 to 1974. However, the reverse was true for 1975.

Soybeans show a pattern of change very close to barley except that yields in 1975 are slightly lower than in 1973. As a result, the increase in the per bushel cost for 1975 is about the same as for the per acre cost.

Changes in variable cost per acre which we have talked about have an impact on the competitive position of these crops. With no changes in price received or yields per acre, the projected increase in costs from 1973 to 1976 would reduce returns above variable costs per acre for wheat and the feed grains by slightly more than 20 percent. But cotton returns above variable costs would be reduced by about 45 percent. This difference is because variable costs are a much higher proportion of gross receipts for cotton than for the other crops at prices and yields existing since 1973. In contrast, soybean returns above variable cost would be reduced by only about 15 percent. The relative gain in competitive position for soybeans follows from the small increase in variable costs per acre.

CONCLUDING REMARKS

Cost of production data is an increasingly important component of our economic intelligence system. Demands for more and better data are growing. The lack of standardized accounting procedures and inappropriate concepts has often resulted in much misuse, erroneous conclusions and misunderstanding. It is time for economists and accountants to team up and solve these problems.

As I have indicated, ERS has a major effort in this area. However, we cannot go it alone. It seems to me a joint effort between USDA and the Land Grant Universities is called for if we are to succeed.

TABLE 1.—INCREASE IN PRICES OF SELECTED COST ITEMS 1973, TO 1974, 1975 AND PROJECTED TO 1976
[In percent]

Item	Increase from 1973 to—		
	1974	Preliminary 1975	Projected 1976
Feed.....	17	13	3
Feeder livestock.....	-23	-33	-26
Motor supplies.....	33	45	57
Motor vehicles.....	13	33	40
Farm machinery.....	16	43	59
Fertilizer.....	70	95	82
Farm supplies.....	24	44	56
Seed.....	37	48	44
Wage rates.....	11	22	33
Production items interest, taxes and wage rates.....	16	27	31
Production items interest, taxes and wage rates (excluding feed and feeder livestock).....	21	38	47

TABLE 2.—CHANGE IN VARIABLE COST OF PRODUCING SELECTED CROPS, 1973-75 AND PROJECTED 1976

Unit		1973	1974	Preliminary 1975	Projected 1976
Per acre:					
Wheat	Index	100.0	128.0	164.0	173
Corn	Index	100.0	137.0	161.0	170
Grain (sorghum)	Index	100.0	134.0	157.0	168
Barley	Index	100.0	134.0	159.0	169
Soybean	Index	100.0	121.0	138.0	147
Cotton	Index	100.0	125.0	149.0	159
Per bushel:					
Wheat	Bushel	100.0	148.0	168.0	161-175
Corn	Bushel	100.0	176.0	169.0	159-177
Grain (sorghum)	Bushel	100.0	174.0	178.0	167-193
Barley	Bushel	100.0	156.0	158.0	160-176
Soybean	Bushel	100.0	141.0	134.0	138-153
Cotton	Pound	100.0	143.0	166.0	158-184
Yield:					
Wheat	Bushel	31.7	27.4	31.0	31-34
Corn	Bushel	91.2	71.3	87.2	88-98
Grain (sorghum)	Bushel	58.7	45.1	51.9	51-59
Barley	Bushel	43.6	37.4	44.1	42-46
Soybean	Bushel	27.7	23.5	28.4	26.5-29.5
Cotton	Pound	521.0	441.0	466.0	450-525

AGRICULTURAL FINANCE OUTLOOK, 1976

[By Philip T. Allen, National Economic Analysis Division, Economic Research Service, USDA]

A wide range of happenings in agriculture—income and price developments, rising costs, increasing foreign demand and many other factors—affect the financial condition of the farming sector. Previous Conference sessions have been devoted to these subjects. In my remarks I will give brief attention to farm income in 1975 and the income outlook for 1976. Next I will discuss the Balance sheet of the farming sector at the beginning of 1976 as well as projections for January, 1977. Major assets in the balance sheet such as land and important liabilities such as real estate and nonreal estate debt—and the sources of this debt—will be considered. Included in this statement will be a consideration of the risks of farming and how these risks affect the attitudes of farm lenders.

FARM INCOMES

Prices and incomes in the farming sector have been favorable since mid-1975 when foreign demand became intensified and livestock prices improved. Higher farm earnings are expected to continue into 1976. In addition, not only is farm income improved but the improvement has been general, across the various farm types. Most significant, livestock producers started to experience some recovery from a very troublesome period that began two and a half years ago. Crop producers did very well in 1975 as they did in 1974 and although their fortunes are intertwined with the strength of export demand, their prospects for 1976 seem favorable.

BALANCE SHEET ESTIMATE FOR JANUARY 1, 1976

Higher income prospects in agriculture and the continuing inflation are reflected in the valuations of farm assets. Farm sector balance sheet estimates place the total value of assets on January 1, 1976 at \$594 billion. This would be an increase of \$74 billion over January 1, 1975, much greater than the 1974 increase of \$44 billion. Proprietors' equities are estimated to have increased by \$65 billion in 1975, or more than double the net farm income expected during the year.

LAND VALUES

Increasing land values in 1975 account for the major share of the rise in the value of total assets. Farmland values are expected to have increased by 14 percent in 1975, similar to the 1974 rate of increase, with the largest increases occurring in predominantly crop producing regions. In figure 1 land value changes are compared with changes in the general price level. Expectations about rates of inflation as well as

beliefs and hopes about farm incomes in years ahead appear to be the major influences in farmland price movements. That farmland values have been rising much faster than the general price level since 1972 probably reflects the much improved farm income levels in those years and optimism over longer run prospects.

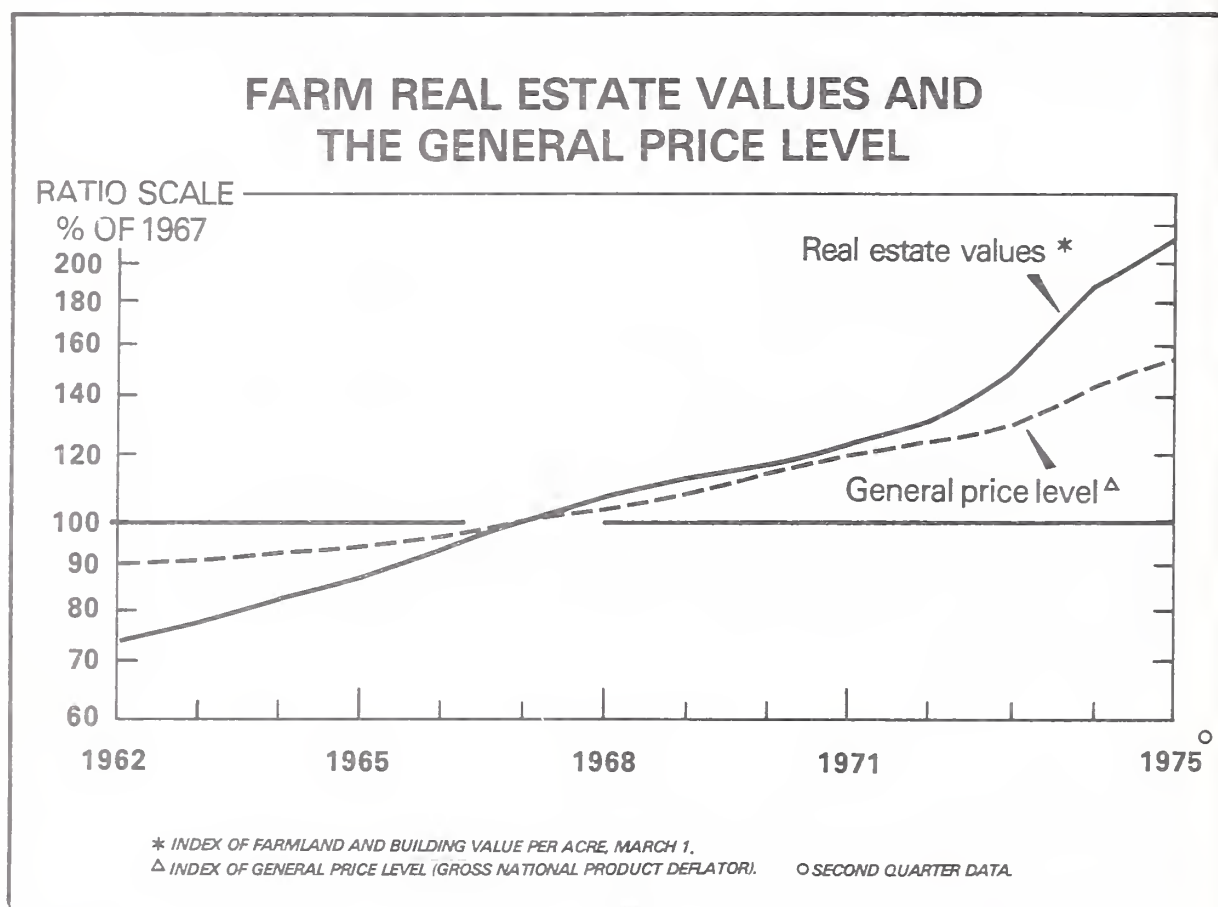


FIGURE 1

The index of farmland values and year-by-year changes in these values are shown in figure 2. The forecast for change for 1975 (Mar 1, 1975—Mar 1, 1976) of 14 percent is quite an early estimate since results are not yet complete for even the Nov 1, 1975 USDA land value figure. However, there have been numerous indications of a strong continuing upward movement in farmland values following prospects of heightened foreign demands for farm products, and the recovery beginning in livestock prices. Land buyers appear to be influenced by short-time price changes, even though most buyers probably consider land to be a long-time investment. It is to be hoped that such buyers—and the lenders who finance them—do not base long-run debt repayment plans on short-term price expectations. Farmland prices have reached a high level and now are about two and one half times the level in 1967.

Fortunately, the evidence indicates that the condition of farm loans—real estate loans as well as other types—has remained fairly strong during 1975. Panel members may want to comment on this. In situations where there was severe testing—involving substantial numbers of livestock producers—the loan losses and delinquencies were quite modest, even though producers suffered great losses in equity. The conclusion is that most farmers, probably reflecting to a degree the influence of their creditors, are conservative users of borrowed

funds, and typically seek to allow adequate margins for unforeseen developments. And with land values, farm costs, and interest rates where they are now, it is to be hoped this condition continues.

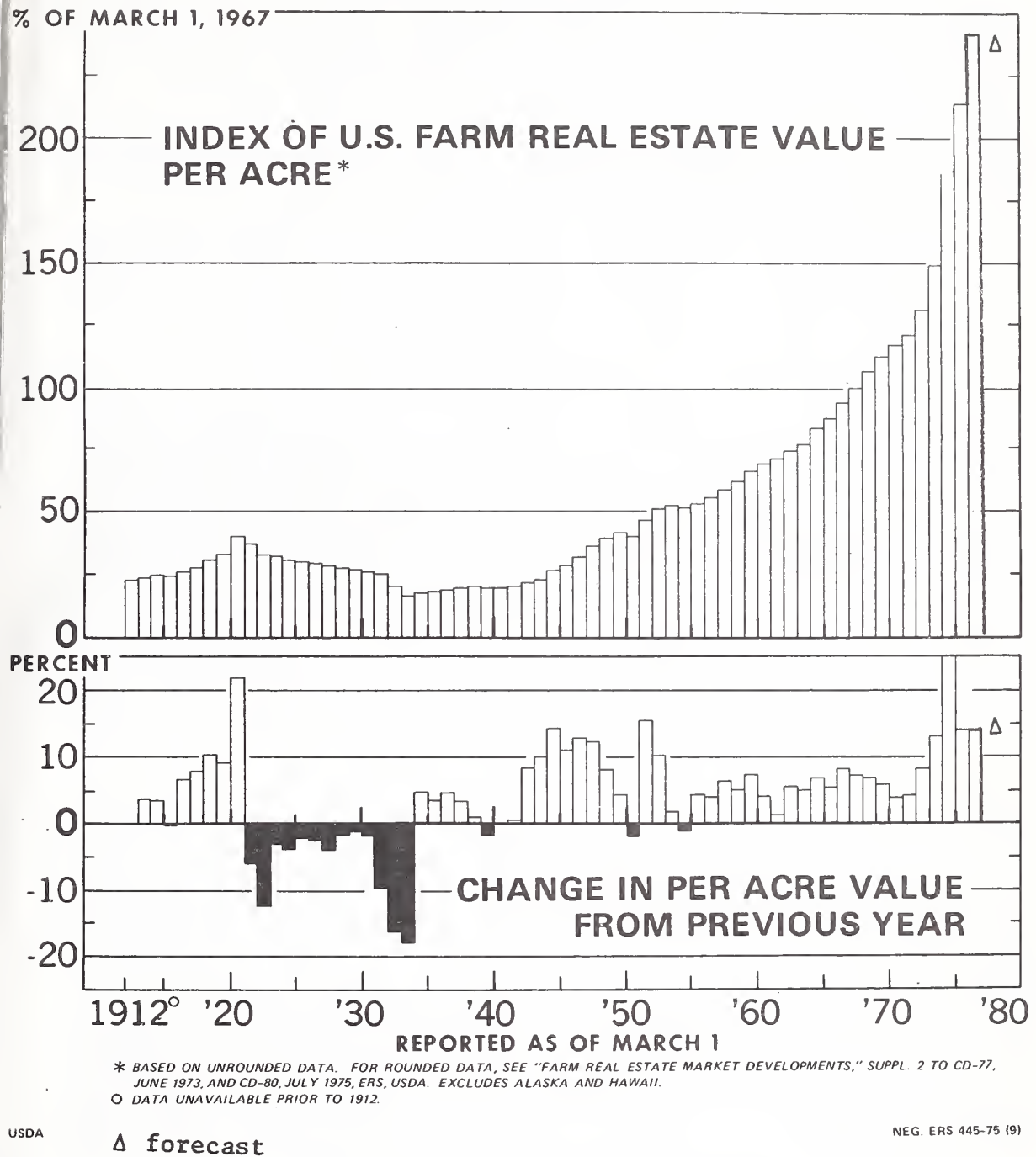


FIGURE 2

RISKS IN FARMING

Lenders in general view the risks associated with farm lending as greater now than in previous years. Of 180 respondents to a recent agricultural finance outlook survey, 110 believed that the risk of making farm loans had increased, 61 believed that it had not changed, while only 9 believed that the risk of making farm loans had decreased.

How lenders view the riskiness of farm loans has an influence on the farm lending policies adopted by the lenders. If they view farm loans as more risky, their response will likely be at least one of the following: to reduce the amount of funds extended, to increase the interest rates,

to increase security requirements, to decrease the term of the loan or to increase the supervision of the loan.

Lenders concern about increased risks reflect the greater price variability of a number of agricultural products now that price support programs are not effective in stabilizing prices. Also debt-equity ratios in the farming sector have edged up a little indicating that the farming sector's ability to absorb such variability is declining.

In light of the increased risk in farming, producers may rely more heavily on risk reduction strategies. These may include hedging, forward contracting, vertical integration, or greater diversity in production.

In addition, marketing news and outlook information will become more important as timing of marketing decisions become more crucial.

BALANCE SHEET PROJECTION FOR JANUARY 1, 1977

A balance sheet for Jan. 1, 1977 and cash flow projections for 1976 have been forecast using the Aggregative Income and Wealth (AIW) simulator for the farm sector. This AIW model uses functional equations which have been empirically estimated and tested using historical information. Assuming unchanged interest rates in 1976 (an alternative assumption was for higher interest rates) farm land values were projected to rise somewhat less rapidly in 1976 than in 1975—an increase of 9 percent was projected for the increase in 1976, compared with the 15 percent estimated for this year. The projected moderation in the rate of increase reflects a projection of no major change in net farm income and a projected moderation in the rate of inflation in the general economy.

FARM DEBT

On the liability side of the farming sector balance sheet, the rate of increase in total debt appears to have been slightly lower in 1975 than in 1974. Total nonreal estate and real estate debt outstanding at the end of 1975 is estimated at \$90.6 billion, an \$8.8 billion or 11 percent increase over the end of 1974. Real estate debt is expected to have increased by 12 percent and nonreal estate debt by 9 percent.

Revised nonreal estate debt estimates show that an important segment of farm debt has increased less in recent years than previously indicated. This debt, which is owed to merchants and dealers and several other nonreporting sources, is estimated to have risen quite slowly again in 1975—a 5 percent gain compared with the 2 percent gain in 1974. Retailers still seem to be moving slowly toward making credit easier for their customers to obtain. The more rapid growth in loans held by institutional lenders partly reflected this slow growth in merchant and dealer short-term credit.

Debt growth next year is projected to be greater than in 1975, both in percentage terms and in dollar amounts. The dollar amounts of both nonreal estate and real estate debts are projected by the AIW simulator to increase during 1976 by record amounts, as shown in figure 3. With this slightly larger growth in debts than in the value of assets during the year, debt/asset ratios will increase a little to about 16 percent. While larger borrowings are expected to be needed, there seems little doubt that these funds can be provided readily by the credit

institutions and other sources. We turn now to the suppliers of these funds.

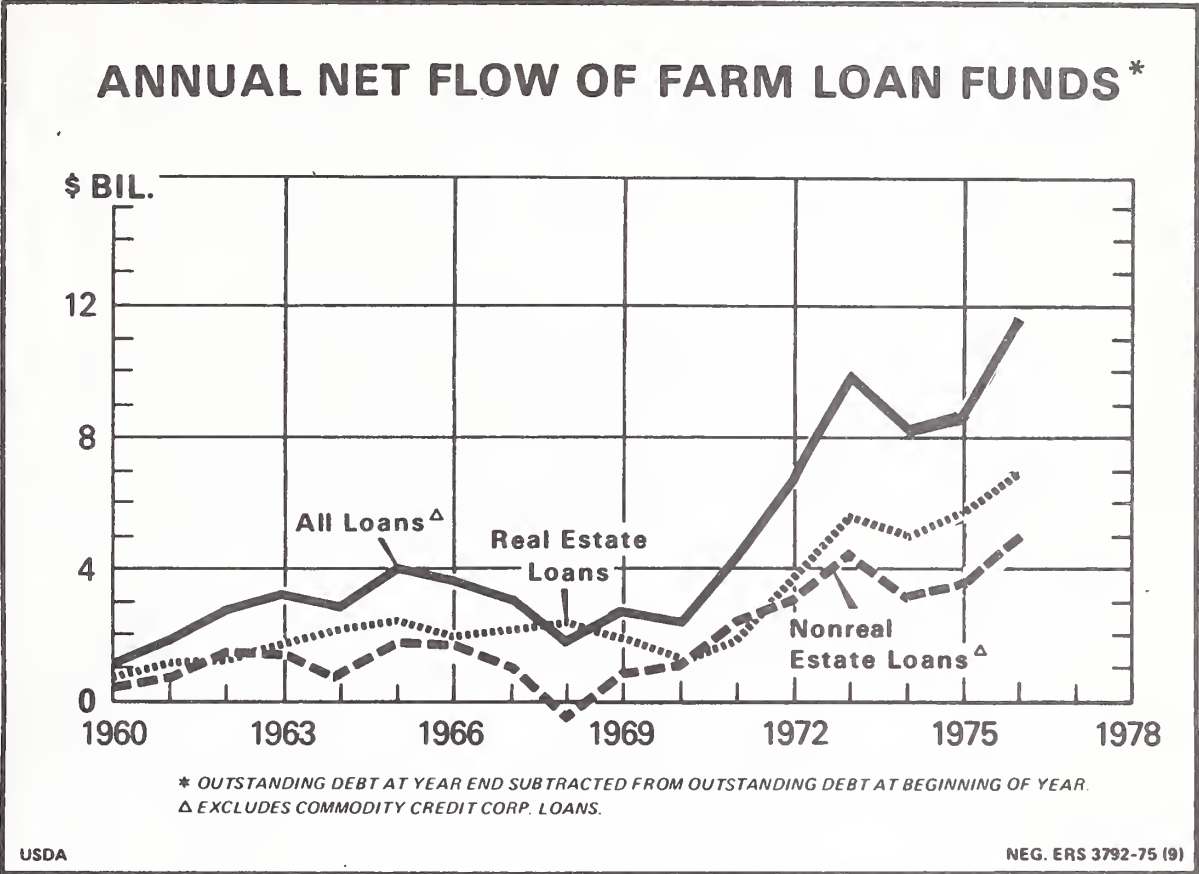


FIGURE 3

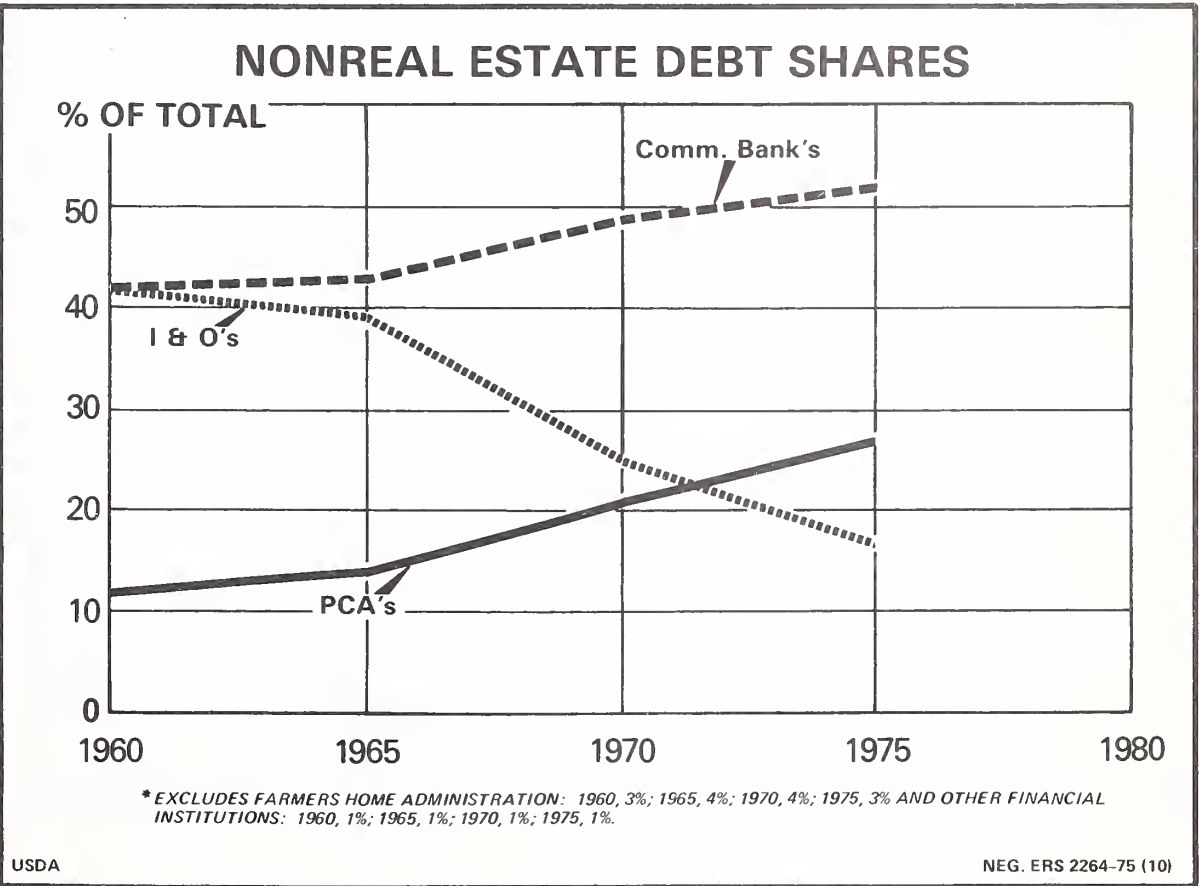


FIGURE 4

In 1975 there was a considerable variation in the growth in loans outstanding among the different nonreal estate lenders. Loans of banks, the largest lender, probably increased about 5 percent; loans of Production credit association (PCA's) in contrast, rose about 15 percent. Banks were reported to have experienced a slower growth in their funds available for farm lending, and may have reduced their lending to cattle producers considerably. Over the years PCA's have handled an increasingly larger share of the total nonreal estate loan market, particularly after 1964 when the proportion of loans held by individuals and others began to decline rapidly. PCA's held 14 percent of the total on January 1, 1965 and 27 percent on January 1, 1975 (fig. 4). Banks tend to draw their funds largely from local sources while PCA's draw their funds from the central money market. Farm loans from these two sources are supplemented by loans from the Farmers Home Administration (FmHA) and individuals and other groups (I&O). Although lender shares are changing, farmers in most areas have more than one source available for their nonreal estate credit needs. However, farmers in some areas closer to urban centers, may be less well served.

In farm real estate lending, the I&O group is the largest lender and its share has remained rather constant over the years (fig. 5). On January 1, 1976, I&O lenders are expected to hold 37 percent of the real estate debt outstanding. This source is mainly from retiring farmers and other sellers of farmland with large equities in their property being sold, and who finance the sale of the property by land contract or mortgage.

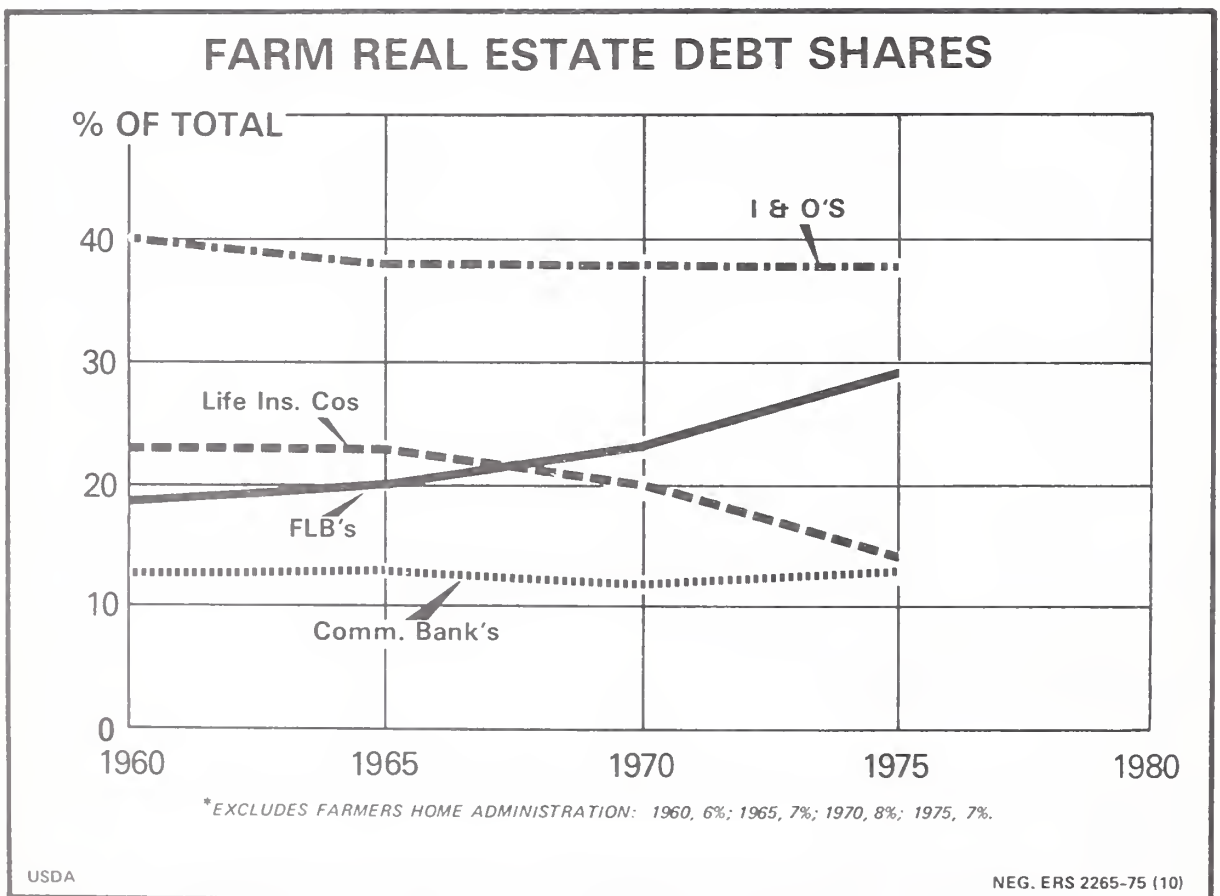


FIGURE 5

Federal land banks will hold the second largest share of outstanding farm real estate debt equal to 31 percent of the total while life insurance companies are expected to hold 13 percent. Since January 1, 1960, Federal land banks have increased their share of outstanding real estate debt from 19 percent to 31 percent. During the same period life insurance companies have decreased their share of outstanding real estate debt from 23 percent to 13 percent. Thus, institutional borrowers are relying on Federal land banks from their real estate loan funds to a greater extent than in the past.

CONCLUSION

Farmers will begin 1976 with their earnings at a favorable level and in a generally strong and improving net worth condition. For livestock producers particularly, the outlook is more favorable now than in 1975 or 1974. Farm asset values, especially land values, rose strongly during 1975; further though more modest, gains seem ahead in 1976. Debts are projected to rise more strongly in 1976 than this year; large gains seem likely in the use of loan funds to expand cattle production and to help to finance purchases of higher and higher priced farmland. Lenders will likely be able to readily provide the larger amounts of loan funds demanded and most prospective borrowers are expected to be able to qualify for such loans. Farmers in most areas of the Nation will continue to be able to choose from among two or more lender sources. Interest rates are expected to stay close to their current advanced levels. With land values and farm cost high and still rising, and with farm receipts more variable and uncertain than in earlier years, lenders are increasing the care with which they make and service their farm loans.

INTERNATIONAL WOMEN'S YEAR

WOMEN IN AMERICAN AGRICULTURE

[By Vivian Wiser, National Economic Analysis Division, Economic Research Service, USDA]

As the United States has been looking forward to 1976, its Bicentennial Year, there has been increasing interest in the role that various groups have played in its history. Only the high points can be touched and certainly this is true of the role of women in our agricultural development. They came, among the first settlers, they toiled, and died.

The ratio of men to women was a particularly crucial one in early Virginia history. In 1619, the "brides' ship" brought 90 young women "of good character" who were to become wives of men who paid 120 pounds of tobacco to cover the cost of their transportation. All were married within a few months.

Travel accounts of the American colonies were numerous. One such description of agriculture in 1625 in the Dutch colony of New Netherlands (New York), told of the men spending their time hunting and the women doing the rest of the work, "tilling the soil, etc."

Almost from the beginning, agriculture developed unevenly. Farm holdings were both large and small, and while some owners had indentured servants, others had slaves, or hired workers. Many women labored along side of the men, and some headed large households. One such fortunate young lady, Eliza Lucas Pinckney has been credited with initiating the indigo industry in South Carolina in 1739. She not only experimented with processing the indigo but raised seed that she distributed among a number of planters. Before long both the colonial government and the British Parliament encouraged indigo production by granting bounties.

The lives of farm women were made even more complicated during times of conflict, when changes in agriculture took place. During the early years of the War for Independence, there were definite shifts from wheat, corn, and other grains to crops that required less heavy work and from very fat to lighter weight animals.

At the time of the American Revolution, 90 percent of the entire population of the new nation lived on farms. Leading gentlemen farmers formed societies to promote agricultural improvement. A few of these continued to operate, but reached only men. Some years later, Elkanah Watson, who promoted the organization of the Berkshire Agricultural Society with its fairs for local farmers, realized the importance of women to the success of such activities. In 1813, a separate section on "domestic manufactures" was set up for the ladies and the

"Farmer's Holiday" was closed with an agricultural ball. The system was adopted by other groups organized by Watson and elsewhere in the country.

Another activity in which women took part along with the men was the production of silk. Two periods of great interest were the 1830's to 1840's and the last decades of the 19th century. It was hoped, that silk production would utilize underemployed women and children. Mrs. Thomas Forman of Rose Hill, Maryland, wrote of baking the cocoons in the oven after she took out the bread. Then she cleaned and "scoured" the parlor after the silkworms but the flower in the carpet "will never be clean again." Another woman who was involved more deeply was a widow with three children, Sarah Briggs Stabler, of nearby Sandy Springs. She tried to make it a livelihood. She raised the trees, tended the silkworms, processed the cocoons, and reeled the silk. Needless to say the repairs on the fences and buildings had to wait. Women were even more in the forefront in the late 1800's organizing the Women's Silk Culture Association in Philadelphia. They cooperated with the Department of Agriculture's project, distributed mulberry trees, entered exhibits at fairs, and purchased cocoons.

A considerably more important role was taken by women during the Civil War. By this time, in the older parts of the North, it was no longer the custom for women to work in the barn or the fields. But when the men went off to war, the farm journals wrote about women running mowers, reapers, rakes, drills and even plows. They also cared for livestock, milked cows, and made butter and cheese. In spite of the outcry that outdoor labor would degrade them, coarsen their minds, lower their social position, and deform their bodies, they kept up the production and fed the country. In the South, where even a larger percentage of the men were in the army, many farm women did the work required to produce food, while others bore the responsibility of managing plantations.

Although the Department of Agriculture got off to a slow start in 1862, it is interesting that its first report included an article on the "Health of Farmers' Families." The second half of the report dealt with "Hardships of Farmers' Wives," in which the author wrote that on "three farms out of four the wife works harder, endures more, than any other on the place." Little consideration was given to lightening her work load or for any other conveniences. The author felt that husbands could and should remedy this situation and that a mother should train her daughters for marriage and her sons in giving their wives proper treatment.

The Commissioner of the new Department of Agriculture, who was interested in rebuilding Southern agriculture, sent Oliver Hudson Kelley on a evaluative trip. Out of this came the idea of a new farmer's organization. His niece, Caroline Hall, became involved and advocated membership for women. In 1867, seven men met in Washington to organize the Patrons of Husbandry, now known as the National Grange. From the beginning, the family was an important unit. Soon women were holding a number of positions, including treasurer. They also served on many standing committees. Women, such as Mary Anne Bryant Mayo of Michigan, were lecturing and encouraging other women to become more interested in social and educational activities. As the years passed, the importance of Caroline Hall's work was rec-

ognized and in 1892 the Grange voted to regard her as equal to a founder of the organization.

On the West Coast, Eliza Tibbetts made her contribution by promoting the growth of the Navel orange. In 1873, William Saunders of the United States Department of Agriculture sent her two trees propagated from stock brought in from Brazil in 1870. The Washington Navel orange, as it was called, was a prolific fruit of fine quality, a good shipping fruit. Its medium size trees were more manageable than those raised previously. Scions from these trees gave rise to extensive orchards. For years the original trees sent by USDA were points of historic interest in Riverside, California, one at the head of Magnolia Avenue and the other in the court of the Mission Inn.

Another of the leaders in American agriculture was Mary Elizabeth Lease, a mother of four, who became associated with the Farmers Alliance movement. She moved to Kansas in 1873 and knew first hand the tribulations of the Midwest. Admitted to the bar in 1885, she developed a gift of oratory that she used in support of Union Labor candidates during the 1888 campaign. During the 1890 campaign, she made no less than 160 speeches for the cause including the one "What you farmers need to do is to raise less corn and more Hell." Mrs. Lease stirred up many men. In 1892, one southern paper found "the sight of a woman traveling around the country making political speeches simply disgusting" and "Southern manhood revolts at the idea of degrading womanhood to the level of politics." In another area she was called the "Patrick Henry in Petticoats." But in the silver states she was well received and sometimes made as many as eight speeches a day. There were, of course, many others, clad in faded calico, with skins tanned to parchment, and hands hardened by toil, could talk in meetings and come straight to the point.

It would be interesting but exceedingly difficult to find out whether these women were associated with the Grange or other organizations.

Perhaps some women had gained experience in speaking from not only the National Grange but also from the farmers' institutes that were organized by agricultural societies, state boards of agriculture, state colleges of agriculture or experiment stations. Some state legislatures appropriated funds. Some states had a decentralized program, where the farmers brought their wives. Sometimes men lectured on subjects of interest to women. Almost from the beginning, women lectured to mixed groups on such subjects as food preparation and diet or even on purely agricultural topics. In 1895, the American Association of Farmers Institute Workers was formed. Women were active participants in these meetings. When the proposal was made to have separate sessions for them, some objected, but it passed. A committee was set up to work on women's institutes. However, they faced competition from the Homemakers Association, the increasing number of canning clubs, and the work of the extension home demonstration agents. The institutes were discontinued during World War I.

These various movements were concerned with what was wrong with rural life and with improved production practices and nutrition. In 1908, President Theodore Roosevelt appointed the Country Life Commission to study the situation. The report of the Commission the following year discussed women's work on the farm and the fact that "relief to farm women must come through a general elevation of coun-

try life." Such improvement would give women time to participate in vital affairs of the community.

The place of women in agriculture continued to be a topic of discussion and study. A 1911 study of a New York county discussed a number of farms owned or operated by women. When the Pennsylvania Society for Promoting Agriculture held a Rural Life Conference the following year, with greetings from Theodore Roosevelt, one speaker discussed at length problems of loneliness and monotony for farm women that had resulted in many being in mental institutions. The speaker felt that much less had been done to lighten the work of women than men on farms. Martha Van Rensselaer, the well known professor of home economics at Cornell University, went further and said that not just work at home but social and mental improvement was imperative.

At about the same time, a survey by C. W. Thompson and G. W. Warber in Minnesota showed changes in women's work that by today's standards seems ludicrous. The percentage of conveniences introduced were given: oil stoves, 57 percent; furnaces, 15 percent; hard coal stoves, 44; soft coal heaters, 31; washing machines, 33; washing machines run by engines, ten; drinking water in the house, 11; soft water in the house, 63; soft water beside the house, 10. The percentages of farm families purchasing particular types of food included: canned vegetables, 16; fruit, 44; fresh meat, 59; prepared breakfast food, 33. They found that women were working in the fields, doing some of the heaviest work. On the other hand, a study by George Holmes, from USDA's Bureau of Statistics concluded that women's work on the farm was limited to household duties and that they no longer tended the kitchen garden and made less butter and cheese.

Another survey, reported by Secretary Houston in 1913, showed that women wanted appliances that would lighten their work, assistance in home management, and a women's bureau. Again, they complained of isolation. Some of these problems were alleviated with the formalization of the extension work following the passage of the Smith-Lever Act in 1914.

Some women were interested in careers in agriculture even before World War I, and attended land grant colleges. California, so Ernest Babcock wrote, had always had a few women students, but the number was increasing in 1914. J. L. Stone at Cornell felt that women agriculture students were at a disadvantage and that the best fields for them were poultry, floriculture, apiculture, small fruits and gardening, or, in other words, professionalizing the lines they had traditionally followed.

Some of the women who attended college and others as well, read Department publications. In 1911, Elizabeth White, daughter of a cranberry grower in Burlington County, New Jersey, read F. V. Coville's bulletin on the experiments of the Bureau of Plant Industry with blueberry culture. They sounded interesting, since she had seen wild blueberries in the fringes of cranberry bogs. Soon she was cooperating with the Department under an agreement for the use of "Whitesbog" near New Lisbon for field tests of blueberries. Several successful varieties were developed there. Work at "Whitesbog" and other places resulted in the domestication, hybridization, and the development of the blueberry as a commercial crop.

The entrance of the United States into World War I drained manpower from the farm and women filled the void. The passage of the Food Production Act in 1917 meant that 600 women were employed as emergency agents in the extension work, principally among women and in the boys' and girls' club work. The following year, there were 1,724 home demonstration workers and 762 boys' and girls' club workers. Moreover, many women and children were picking cotton, picking and packing fruit and harvesting other crops. In fact, some came from nearby towns. They cooperated in the joint U.S. Department of Agriculture—Food Administration drives for increased production and conservation of food. They worked at canning, drying, or otherwise preserving food. They also worked in commercial processing plants.

During the War years, many young women came to Washington to work in the Department of Agriculture or the United States Food Administration. Generally, they were in low grade clerical positions, except for a few in extension work and the library. There was also a sprinkling in scientific bureaus, such as Mary Pennington, who came to head the food research laboratory of the Bureau of Chemistry in 1907. In 1919, she left the Department for a position in private industry that paid about double her salary here. In recognition of her achievements in the field of poultry refrigeration, the Poultry Historical Society elected her to its Hall of Fame in 1959.

Secretary Henry C. Wallace was instrumental in bringing to the Department the first and only woman to head a major agency. When he spoke before the American Home Economics Association in 1922, he announced his intention to expand the home economics work into a new bureau to be led by a woman, Louise Stanley, a friend of the Wallace family, was selected. She had previously been head of the Home Economics Division of the University of Missouri. One of her first actions as chief of the new bureau was to call a meeting of national women's organizations to discuss plans, policies, and fields of research, thereby getting their support from the beginning. Research of the Bureau was given further financial support when the Purnell Act was passed in 1925.

Studies of adequate diets at various levels of living, initiated by Dr. Stanley and carried out under the direction of Hazel K. Stiebeling, were of major importance in departmental planning. In 1933, these diets were modified to meet emergency conditions and published as *Diets of Four Levels of Nutritive Content and Cost and Food Budgets for Nutrition and Production Programs*. They were of special importance since they provided the basis for estimating the food products needed for an adequate diet.

Stanley, Stiebeling, and a host of others inside and outside the Department had long worked through various organizations to change conditions in rural areas. The Women's National Farm and Garden Association had been formed in January 1914. The home economists had joined together in establishing the American Home Economics Association in 1909. In 1918, Anne Evans found that country women were active in many organizations including Parent-Teacher Associations, cooperatives, home makers' clubs, garden clubs, National Congress of Farm Women, and the like. As the farm bureau movement expanded many worked through its channels.

At about the same time that the *Four Levels of Diet* was published, women's rural organizations took an important step forward by organizing the international Country Women of the World. Representatives from over thirty organizations met in London in 1933 to take the final action.

Another organization to strengthen work with and by women is the National Extension Homemakers Council, organized in 1936. It was organized to provide an opportunity for homemakers and home demonstration groups to pool their judgment and experiences for the progressive improvement of home and community life. State councils representing homemakers were organized through the cooperative extension service of the USDA and the land grant colleges. They have centered their attention on such areas as home nursing and first aid, health services, school lunch programs, and continuing health programs.

Women reached another peak in their contributions to farm production during World War II. In many ways, their reaction was comparable with that in World War I, but the war was more extensive and lasted longer. Farm women and girls drove tractors or horse drawn equipment, operated combines, reapers, mowing machines and hay loaders, cared for cattle, and did the chores. Some of the daughters came home for vacation or for the duration to help.

Other women and girls went out from towns and cities especially to help detassel corn, chop and pick cotton, harvest vegetables, and pick fruit. These groups were part of the Women's Land Army. Their members came from colleges, high schools, offices, and homes. They worked for eight or nine hours a day at piece rates or hourly wages of forty or fifty cents. During the period 1943 to 1945 it has been estimated that over a million women were recruited for seasonal work and over 32,000 worked year round, primarily on dairy and poultry farms. Women also worked in food processing plants, many located in rural areas. These canned, froze, and dried food.

The major changes in American agriculture during World War II and the post war years affected the farm home and the life of farm women. Most homes now having running water, central heating, electricity, telephone, radio, television, freezers, and other labor saving appliances. The emphasis on large scale or more specialized production has resulted in many farms no longer keeping a large garden or a cow to provide butter and milk, or poultry.

Nonetheless, farm women and children still work hard, sometimes, for example, running tractors during planting and harvest time, preserving and freezing food, and so on. But they take more responsibility than their mothers could for local schools, cooperatives, farm organizations, churches, and other community activities. It is fitting that their contributions be recognized in this International Women's Year.

INTERNATIONAL WOMEN'S YEAR: WHAT IT'S ALL ABOUT

[By Virginia Y. Trotter, Assistant Secretary for Education, Department of
Health, Education, and Welfare]

When approached with the request to participate in the National Agricultural Outlook Conference, I accepted with genuine pleasure. I was, of course, delighted to have an opportunity to address this distinguished audience of professional colleagues and personal friends on a subject of prime interest and concern to me—equal rights and opportunities for women and how this is being encouraged through the International Women's Year. But I was particularly excited knowing the opportunities which challenge each of you to take the goals and aspirations of the International Women's Year and to translate them into effective and efficient actions to improve the lives of all people in your communities.

In my remarks today, I will broadly address the concept and ideals of International Women's Year—what its goals of equality, development and peace mean to women *and* men around the world, and what challenges lie before us in implementing these goals. But I will focus on the goal of development—because this is where you can play a particularly strong role—where you have a mandate.

It has been a scant two hundred years since our Nation's founders faced a similar challenge and boldly declared: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain inalienable rights, that among these are life, liberty, and the pursuit of happiness." In those two hundred years, we have built resolutely on their foundations of freedom and social justice. We have expanded their declaration from "all men are created equal" to "all humankind is created equal." We have filled the first chapter of our national history as few people or countries could have dreamed: We have developed technologies to supplement and complement every phase of our life. We have economic and educational standards of living which are envied and imitated throughout the world.

But the success of our national endeavor is most clearly shown by our willingness to acknowledge our mistakes and our foibles. We readily admit, for example, that we have not achieved a society free of prejudice and discrimination—the society of equal opportunity ideally envisioned by the framers of the Constitution.

We still have need for courts to order the integration of races; we still need legislatures to re-affirm the rights of women. But in working toward the ideal, our society is fortunate that these causes—and others which would nurture and improve our society—have articulate advocates.

One of the areas of national and world concern most in need of articulate and resolute leadership is the movement toward equal rights for women. We can be proud that American women now in the front lines of our national effort to rekindle the spirit of our first revolution are looked to as the standard bearers for the worldwide women's movement. It is the conviction of these American women, and women, globally, that the goals of equality, development and peace—the goals of the International Women's Year—are not goals for *women*, but serious goals for our world society and that men—no less than women—stand to gain.

Too often in the past, women's rights have been considered independently of human rights, and women's problems regarded as somehow removed and separated from the "real" problems confronting society. Ironically, "separate" International Women's Year is conceived precisely to break through such separatist thinking by demonstrating this interdependence of world problems and women's inferior status. It is time to acknowledge that the worldwide denial of women's rights and opportunities is at the very root of our development problems and socio-economic ills—including illiteracy, malnutrition, mass poverty and unchecked rates of population growth.

Looking back to the beginning of the evolution toward an International Women's Year, we recall that it was in 1946 that the United Nations Commission on the Status of Women was established, and that it was in 1967 that the Declaration on the Elimination of Discrimination Against Women was adopted by the United Nations General Assembly. The original Resolution to establish the International Women's Year was initiated in 1972 by the Commission on the Status of Women, elected by the United Nations Economic and Social Council from 32 countries. In December 1972, the year 1975 was chosen because it was midpoint in the United Nations' Second Development Decade, which has as one of its goals the integration of women in the development process.

In January of this year, when President Ford signed the Executive Order which made possible the creation of a National Advisory Commission, he said in part: "International Women's Year is not just for women. It is for all people dedicated to seeing that the highest potential of each human being is reached."

The plans of this International Women's Year Presidential Commission include in-depth studies in the following areas: Media; enforcement of the law; reproductive freedom; international interdependence; homemakers; women with special problems; arts and humanities; women in power; equal rights commission; and child development.

In late June, 6,000 women—and men, too—came more than 130 countries to Mexico City for the World Conference on International Women's Year. This Conference served to focus world attention dramatizing the issues of eliminating discrimination against women and of integrating women into development, and to develop practical and realistic measures to achieve the goals of International Women's Year. The key to the success of the Conference was our comprehension that these matters are universal in nature, are interdependent, and can only be tackled through cooperation and mutual understanding.

Approval was given at the Conference to a World Plan of Action seeking to promote the three major International Women's Year goals—equality, development and peace. Although the plan is projected for the 1975–85 decade, it points to a number of urgent “minimum” targets for the first five-year period. These include a marked increase in women's literacy; equal enrollment in primary schools; and more job training and opportunities with equal pay for equal work. They also include provisions for equality in the exercise of civil, social, political, and legal rights, with increased participation of women in policy-making positions at the local, national, and international levels.

Other World Plan targets include better health insurance, nutrition, medical care and availability of family planning services; the development of modern rural technology, and other means of reducing the heavy workload of women; and recognition of the economic value of women's role in the home, in domestic food production and marketing, and in voluntary activities not traditionally remunerated.

Simultaneous with the World Conference, which was for official government delegations and observers, a Tribune was held in Mexico City for members of nongovernmental organizations as well as interested individuals, where a formal program was held daily. Among the many Tribune panels and perhaps of greatest specific interest to this Conference, was one on Agriculture and Rural Development. Panelists included women from Mexico, Tanzania, the United Kingdom, and the United States.

Among the recommendations brought out by this panel were suggestions on the problem of illiteracy, the need for education and training, the implementation of cooperatives, and the need for women in the decisionmaking process.

Efforts and events in celebration of International Women's Year are coordinated in the United States by the U.S. Center for International Women's Year. The Center, located in Washington, D.C., is nonpolitical and nonpartisan in nature and functions as a clearinghouse for information. The Center “spreads the word” about International Women's Year, provides materials on what is being done here and abroad, and coordinates governmental and voluntary activities in observance of International Women's Year.

The Center is assisted by the National Advisory Committee and a Government Liaison Advisory Committee, the former composed of representatives of approximately 75 nongovernmental organizations based in Washington, and the latter with women from the various governmental departments such as Agriculture; Interior; Health, Education, and Welfare; and so forth.

Perhaps you have heard about the International Women's Year Salute to Women calendar which alphabetically by month features women in different careers. For example, January with the letter “A” honored women in Aeronautical Science, Astronomy, and Atomic Science. February featured women in Business, Industry and Labor; March, women in Communications; April, women as Doers or Volunteers. May, women in Education; and June, women in Farming and Natural Resources. The calendar continues with July honoring women in Government; August, women as Homemakers; September.

International; October, Joy and Kindness; November, Law, Medicine, Nursing, Administration, Secretarial Work; and December, Minds and Hearts of People—Spiritual and Aesthetic Values.

During each month, conferences and meetings are held, providing the opportunity to highlight women of achievement, their motivation, the factors that influence their performance—in fact to show that their advancement is also the advancement of humanity as a whole.

When we think about International Women's Year, many naturally want to focus on what women are doing in foreign countries. Admittedly, the status of women differs significantly from country to country, due to cultural, political, economic, and social factors. There are also wide divergencies in the condition of women within countries themselves, particularly between rich and poor, rural and urban, privileged and underprivileged. But I do not see a conflict between the prevailing conditions in developing and industrialized countries as regards the real aspirations of women for social justice and a better life. In fact, women throughout the world share so many problems that they can and must support and reinforce each other in a joint effort to create a better world.

We must keep in mind that men and women are equally affected by the future of our world. It is, therefore, their joint responsibility to determine their common destiny. Men cannot claim an exclusive right to shape the future of our world. It is time for them to accept the challenge and share with women in the decisionmaking process. It is a special challenge for women to assume these decisionmaking responsibilities. In practice, however, this will only be possible when women are no longer denied equal opportunities and when men share in full the responsibilities traditionally assigned to women in the family.

And equal opportunities begin with education. It has been said that women's full equality will come about as a result of their being educated and joining the work force. However, if this is to happen, we must take into account not only number but also the type of education and the type of work offered them.

As long as the instruction which women receive continues to be based on old prejudices, that instruction itself will limit their potential. And as long as the jobs to which women have access continue, as a consequence of that same instruction, to be jobs which merely support men's work, we shall be very far from achieving the equality which we are calling for.

You who are here today have perhaps the most important role to play in implementing the World Plan of Action. Our U.S. Ambassador to Mexico, Joseph J. Jova, has said: "Real change and real equality will not take place in a vacuum . . . Things cannot be as they were before. How it will be apparently is in our hands."

National and international conferences help in determining priorities and strategies, but it is you here today who must assume the responsibility to make the goals of the year a reality. You are instrumental in communicating new ideas from Washington to State Program Leaders in Extension Home Economics—*Use* this forum to open the flow of ideas to improve our society. You are instrumental in the development of educational materials that will reach homemakers, 4-H youth and others—innovate, inspire them to strive for an improved quality of life for our nation.

The task we have before us is clear and precise. We are to implement the World Plan of Action to achieve the integration of women as participants on an equal footing with men in the effort to achieve full development, at the same time eliminate discrimination based on sex, and achieve the fullest collaboration of women in strengthening international peace. The Preamble of the United Nations Declaration on the Elimination of Discrimination Against Women, the basis for the World Plan of Action discussions in Mexico City, contains the statement: "The full and complete development of a country, the welfare of the world, and the cause of peace require the maximum participation of women as well as men in all fields." Those of us who were fortunate enough to attend the World Conference can reach out in only a small way to promote awareness of International Women's Year and to encourage a new era of participation by women in all matters—not only in matters of exclusive concern to them.

We have had "International Years" before—they were conceived in hope and have borne fruits beyond the wildest expectations of the year's authors. One of the years which excited the best of our national and international imaginations was the International Geophysical Year. We dreamed and acted—and we reached the moon. Now we are in the International Women's Year—it's time to reach out again.

The success of International Women's Year—with its Plan of Action for 1975 and for future years—depends entirely on you. From my experience with you and from the caliber of your contributions in the past, I know you will succeed.

OBJECTIVES OF INTERNATIONAL WOMEN'S YEAR: IMPLICATIONS FOR EXTENSION

[By Dr. Opal H. Mann, Assistant Administrator, Home Economics Extension Service and Dr. Frances M. Magrabi, Consumer and Food Economics Institute]

The World Plan of Action, developed as part of International Women's Year (IWY), calls for a sustained, long-term effort over a 10-year period (1975-1985) to achieve objectives of peace, equality, and development. The Plan includes recommendations and priority areas of concern and guidelines for national action to improve the status of women throughout the world.¹ I propose that we, as professional persons, reflect on the goals of IWY, identify areas of national action that have a direct bearing on our professional work, and incorporate those goals and objectives into plans and programs. I was asked to address my remarks to objectives of IWY and implications for Extension Service; therefore, I would like to discuss the following topics in the order outlined:

1. Specific areas for national action recommended at the Mexico City World Conference of International Women's Year.
2. Extension Home Economics focus areas of national concern.
3. Relationships and implications of IWY objectives to Extension Home Economics.² (Those of you who are related to programs or agencies other than Extension Service may find it helpful to think through a similar analysis and apply the IWY plan of action to the objectives and programs with which you are most concerned.)
4. A challenge.

IWY: SPECIFIC AREAS FOR NATIONAL ACTION

At the 1975 World Conference of International Women's Year, priorities and guidelines were established to achieve long range objectives of equal opportunities for women and their full integration in national life. The following "Specific areas for national action" were recommended in the Conference report:

1. International cooperation and the strengthening of international peace.
2. Political participation.
3. Education and training.
4. Employment and related economic roles.

¹ "International Women's Year Report," Fifty-ninth session, Agenda Item 5, of the Economic and Social Council, Mexico City, Mexico, July 1975. GE. 75-67445, pp. 1-11.

² Extension Home Economics refers to the total Extension Home Economics program in the United States, consisting of extension Home Economics, U.S. Dept. of Agriculture, and Cooperative Extension Service Home Economics of the Land Grant University System which delivers Extension education to people at State, District, County, and Community "grass roots" levels. The Cooperative Extension Service nationally includes the Fifty States, Puerto Rico, the District of Columbia, the Virgin Islands, and Guam.

5. Health and nutrition.
6. The family in modern society.
7. Population.
8. Housing and related facilities.
9. Other social questions.

Further recommendations for accelerating achievement of International Women's Year goals pertained to: Research, data collection and analysis; mass communication media; international and regional action; and review and appraisal of progress at regular intervals.³

A comparison of the specific areas for national action recommended at the 1975 World Conference of International Women's Year and the national areas of concern identified in the Extension Home Economics program development document, Focus II, shows definite relationships between objectives of IWY and Extension Home Economics.^{4, 5} Some IWY objectives are more appropriate and more closely relate to the objectives of other agencies and organizations than to Extension. However, many of the objectives and recommendations in the IWY plan of action have been a part of the Extension program since its beginning more than half a century ago.

EXTENSION HOME ECONOMICS FOCUS AREAS OF NATIONAL CONCERN

The Extension Home Economics programs development publication "Focus II" communicates the scope of Extension Home Economics programs and how they can contribute to resolving some of the major concerns related to the quality of family living. The introduction describes major situations, changes, and trends in the United States which affect individuals and families and influence educational program direction. The publication recognizes that development of Extension Home Economics programs requires an understanding of the clientele to be served and that national situations and trends are general indicators of educational needs developed around six broad areas of national concern: (1) human nutrition, (2) consumer concerns, (3) children and families, (4) housing, (5) health, and (6) community development.⁶

RELATIONSHIPS AND IMPLICATIONS OF INTERNATIONAL WOMEN'S YEAR OBJECTIVES TO EXTENSION HOME ECONOMICS

The most closely related and basic areas of agreement between the recommended National Action for International Women's Year and Extension Home Economics appear to be:

1. Education and training,
2. Health and nutrition,
3. The family in modern society, and
4. Housing and related facilities.

Other national actions with one or more components or relationships to Extension Home Economics programs and objectives include: International cooperation and the strengthening of international

³ "International Women's Year Report," op. cit., pp. 16-29.

⁴ See footnote 3.

⁵ Focus II: Extension Home Economics Task Force, Home Economics Subcommittee of Extension Committee on Organization and Policy, 1974, pp. 1-3.

⁶ See footnote 5.

peace; population and other social issues; research; mass communication media and review and appraisal of progress.

Extension areas which most closely relate to recommended national action for International Women's Year are more fully explained as follows:

Education and Training.—Cooperative Extension Service of the USDA and the land grant university system is described in the Handbook of Adult Education as—"The world's largest publicly supported, informal adult education and development organization with over half a century of recognized achievement."⁷ The Cooperative Extension Service of the USDA and Land Grant University system is operating in every State in our Nation and in the District of Columbia, Puerto Rico, the Virgin Islands, and Guam. The Extension Service of the USDA is giving special emphasis to problems of people living outside of cities with populations of 50,000 and over.

Extension Home Economics as a program area of the Cooperative Extension Service provides education which assists families in identifying their needs, making decisions, and utilizing resources to improve the quality of family living in the home and community. More specifically Extension Home Economics works to:

Enhance the quality of decision making and increase the knowledge and skills needed to carry out these decisions.

Improve the ability to effect and adapt to societal change by exploring solutions which most effectively deal with problems and concerns of individuals and families.

Recognize and identify unexpressed needs which affect individual and family well-being and future directions.

Increase ability to use and participate in the development of community services which contribute to the quality of family and community life.⁸

Even though the Extension Home Economics program is directed to families of all levels of society special effort is directed to low income families and young families, and to youths, racial minorities, the elderly, and the handicapped; emphasis is given to training volunteer leaders who teach others in their communities. Extension Home Economics concentrates primarily on meeting the home and family living needs of families. More than 4,000 Extension home economists at the Federal, State, and county levels; approximately 8,000 paraprofessionals; and 860,000 trained volunteer leaders in 3,150 counties and territories extend home and family living education to approximately 10 million families annually. The homemaker is the family member most often taught. In the Expanded Food and Nutrition Education Program alone more than a million low income homemakers have been taught in depth and two million youths have been reached with nutrition education since the program was initiated 7 years ago.⁹

Many different audiences are reached through other program areas of Extension Home Economics including 600,000 members in 35,000 organized Extension Homemaker groups in 41 States and Puerto

⁷ Boone, Edgar J. "The Cooperative Extension Service." *The Handbook of Adult Education*, edited by Smith, Robert M., Aker, George F., and Kidd, J. R., Adult Education Association, U.S.A., The MacMillan Book Company, New York, N.Y., 1970, p. 265.

⁸ See footnote 5.

⁹ Leidenfrost, Nancy B., EFNEP . . . Accomplishments and Future Needs, Extension Service, USDA, Washington, D.C., HE-89, July 1975, p. 1.

Rico. A recent survey conducted by the National Extension Homemakers Council shows these homemakers serving as volunteer leaders and teachers gave a total of 24,880 ¹⁰ years of voluntary service to the people of the United States in a 12-month period and taught a million youths and 2 million adults.¹¹

Health and Nutrition.—Health and Nutrition are important objectives of IWY. Recommendations for health and nutrition programs are an important component in the World Plan of Action.¹² These are also areas of concern in the family living program of the Cooperative Extension Service. Nutritionally inadequate food consumption prevails among a high proportion of people in the United States with more and intensified nutritional problems prominent among the low income families. Young parents are becoming more and more concerned about the food and eating patterns of infants and young children. Consumer concerns related to rising food costs, food safety, home food preservation, home gardening, food labeling, new food products, and conservation of energy have been and continue to be of increasing importance. During the past year food and nutrition education received higher emphasis than any other content area of Extension Home Economics—more than a third of all Extension Home Economics professional staff time nationally was expended in food and nutrition education. In addition, approximately 8,000 aides nationally teach nutrition education to low income families—both adults and youths. A large segment of the population is reaping benefits from this program. Approximately 300,000 families are enrolled at any one time and more than 100,000 youths have been in the Expanded Food and Nutrition Program during each 6-month period for the past 5 years.

Health is also one of the major Focus areas of Extension Home Economics. A National Health Survey conducted in 1975 called attention to Extension's educational role in preventive health. Extension health programs assist in analyzing community health needs, obtaining health programs and facilities, and providing education related to prevention of illness. Members of the local extension staff assist in providing contact referrals to appropriate health agencies and through Extension volunteers assist in diagnostic clinics. Extension Home Economics agrees with the IWY concerns that more adequate health and nutrition education is needed especially in rural areas (as well as inner cities) and that the priority audience is the expectant and young mothers and their children. Extension does not have sufficient numbers of staff to reach all families who need Extension's educational services.

The IWY plan for national action identifies the need for women to become informed and active participants in planning and decision making to obtain needed health services and educational programs for the families of their community. Campaigns to reach families with needed information and education were recommended through communications media and effective educational techniques and methods.¹³

The Family.—Family education and the quality of family living is basic to the existence of Extension Home Economics as a profession.

¹⁰ The average volunteer leadership given by $\frac{1}{5}$ of the membership involved in the survey was applied to the total membership.

¹¹ "The Extension Homemaker Survey: A Look at Volunteer Leadership," National Extension Homemakers Council, unpublished report, Extension Home Economics, USDA, August 1974, pp. 1-4.

¹² "International Women's Year Report," op. cit., pp. 22-24.

¹³ Ibid., p. 24.

The family provides the principal setting for the formation of the individual personality—the values, skills, and self-discipline essential for effective functioning in the larger society. The family is the basic unit in today's society in which internal and external forces continue to produce relationships which can benefit both family members and society at large. Many different family patterns and structures, and the changing roles of family members create new needs and demands for educational programs and services.

The objectives, "To promote equality of economic rights," and "to promote equality of rights and responsibilities in the family," are among those stated for IWY. In the World Plan of Action it is further suggested that "the functions and roles traditionally allotted to each sex within the family will require continual re-examination and re-assessment in the light of changing conditions."¹⁴ We in family related consumer programs are challenged to offer services appropriate to needs created by those changing roles and functions. Do we, for example, plan programs and educational services that will be useful and attractive to those men who shop for groceries and care for small children? Do we provide information and budgeting materials for families with two earners, one of whom (not necessarily the woman) may need to work part time or intermittently in order to perform needed services at home? Do we place an appropriate program emphasis on the contributions to family life of all family members, for example, by providing information on need for, and means of providing insurance protection to cover loss to the family of homemaker services due to death or disablement?

I am aware that Extension Home Economics is making progress in programming to meet needs of the total family through young family programs, for example, and takes into consideration changing roles and functions of family members. We need to continually examine the effectiveness of programs directed to the family.

The world conference report of IWY recognizes the family as the primary and fundamental nucleus of society which fulfills its mission in an organized community and as an important agent of social, political, and cultural change. The report states that the family is "the fundamental institution of natural origin, distinguished by its character as a community of unity, love, and life which forms its members in their individuality and serves as the first school of social relations."¹⁵ The family is recognized as the place where the cultural heritage of the past is transmitted and renewed in the interest of attaining the ideals of equality, freedom, peace, and international justice.¹⁶

The IWY World Conference suggested that all societies should place higher value on the role of family in fulfilling its basic functions of procreation and education of children and that States should help create true family communities. This would involve policies aimed at creating an atmosphere conducive to strengthening family ties. Community services would be aimed at the different generations in the family nucleus. The family would be recognized as an important

¹⁴ Ibid., p. 25, par. 126.

¹⁵ Ibid., p. 85.

¹⁶ See footnote 15.

nucleus of society, and its members would play an active role of direct participation in education and social services to meet family and community needs.¹⁷ As you can see the Extension Home Economics and IWY concepts of family are very much in agreement yet much remains to be accomplished.

Housing and Related Facilities.—Access to adequate housing in a suitable living environment is a major problem facing individuals and families. Rapidly rising costs and limited options are national concerns. Many people now live in substandard houses. By 1980 the United States will have about 224 million people living in 77 million households. Seven million additional families and two million additional individuals will need a place to live. Energy for household use will be a continuing problem as countries grow and need more energy. The World Plan of Action reminds us that: "The design of the house should take into account the needs of the entire family, especially the women and children." The report further states, "Use of the following should be encouraged: (a) building materials which require minimal or no maintenance; (b) equipment and appliances which do not present safety hazards; (c) Labour-saving interior finishes and surfaces conducive to comfort and hygiene; (d) furniture which is movable, storable and easily replaceable; and (e) where feasible and appropriate, an area for women to undertake activities such as reading, sewing and weaving (in some societies this may be a communal space to increase social cohesion)."¹⁸ I'd also like to inject the thought that there needs to be more flexibility inside houses and apartments to meet needs of changing life styles, and changes in needs of people as they progress in the life cycle. Why not construct housing so that interior walls can be easily moved and adjusted? Why not have movable islands of kitchen equipment? Labor-saving devices appeared to be of priority importance in the world plan. However, we in America must evaluate the house, its furnishings, and appliances more broadly, in terms of their contribution to reducing labor, energy consumption, and operating cost. An international "time use" conference background paper of the 1975 World Conference in Mexico City IWY stated that American homemakers were spending on the average about as much time on household tasks today as they did 40 years ago, even though during the past 40 years household appliances have become much more sophisticated in design and more widely owned. One explanation is that many appliances are used to improve the quality of family living rather than to reduce time spent on housework. A contributing factor is that more time is spent now by homemakers in marketing and recordkeeping than in the past.¹⁹

Do we provide sufficient guidance to families to enable them to select and use appliances advantageously, to keep records efficiently, and save time and make wise decisions in the marketplace? Now that many women work outside the home and families are feeling financial pressure due to the more difficult economic situation, they may have greater need than ever before for labor-saving techniques and appliances but

¹⁷ See footnote 15.

¹⁸ "International Women's Year Report," op. cit., p. 28.

¹⁹ Szala, Alexander, *The Situation of Women in the Fight of Contemporary Time-Budget Research*, Karl Marx University of Economic Sciences, Budapest, Hungary, 1966. Reprinted as a conference background paper for the World Conference of the IWY, Mexico City, June 10-July 2, 1975. 75-07655, pp. 12-13.

less money to purchase them. Households must have enough information to know when replacing an appliance or purchasing an additional one might actually reduce energy use and save money.

Present and projected situations and needs challenge us to provide increased educational assistance to homemakers in analyzing family needs and patterns of activities and developing plans for selecting and using furnishings and equipment so as to reduce energy use and household operating costs.

The IWY Plan for Action states: In the projection of the house into a neighborhood, designs should provide for services and utilities and neighborhood facilities which reduce labor and travel. In the design of a network of neighborhoods, consideration should be given to accessibility of neighborhood centers for women and children.²⁰ Many other aspects of housing mentioned in the World Plan of Action are already areas of concern to the Extension Service and should continue to receive attention.

Other IWY and extension home economics program relationships include:

International cooperation and the strengthening of international peace.—Extension Home Economics works in many ways to further international cooperation and peace. For example the National Extension Homemaker's Council of 600,000 members from 35,000 organized community groups participate in the international organization, "Associated County Women of the World." They send many delegates to the Triennial World Conferences. In addition to formal dues, approximately \$25,000 annually is contributed by members through a "Pennies for Friendship" program. This is presented to the ACWW by the Extension Homemakers to assist in sponsoring projects and implementing world educational objectives and programs. Last year, for example, 343 U.S. Extension Homemakers attended the ACWW Triennial Conference in Perth, Australia. The program, developed around the theme "A World To Share," promoted improved world understanding among 1,500 Homemakers from 45 different countries of the world who participated in the 2 weeks of conferences and workshops.

A national meeting was held this year to begin preparing U.S. women for stronger participation and leadership in decisionmaking and policy-developing roles at the next world meeting of Associated County Women. The Extension Homemaker's Council also assists in sponsoring foreign exchange and many other programs between the United States and other countries. For example, North Carolina Extension Homemakers entertained 786 international visitors in their homes in the past 2 years. They also sponsor an international foster child; 476 members participated in an international reading program; two busloads of women went on a planned international tour; and they made contributions to the international Peace Gardens in North Dakota, to UNICEF, and to an international welfare for the blind project.²¹ Most State Extension Homemaker Councils participate in some of these same projects. One project to which they contribute sizeable amounts of money is "Save the Sight" through proper nutrition. Spe-

²⁰ "International Women's Year Report," op. cit., p. 28.

²¹ 1974 and 1975 State Reports, National Extension Homemakers' Council.

cial emphasis is on vitamin A. Nine centers have been established in India and the project is growing in Brazil.

The Extension Home Economics staff works cooperatively with International Extension in hostessing and instructing foreign visitors who come to the United States to learn about Extension Home Economics and family living programs and educational services in the United States. These activities and programs closely relate to the IWY "International Cooperation" area of action. We recognize the opportunity and importance of expanding this area of activity.

Research, data collection, and analysis.—The International Women's Year national Plan for Action calls for research—chiefly data collecting relevant to the status of women. A much broader base of research would be desirable. Extension Service depends upon research to provide an important back-up source of technical information and content as well as techniques and methods to assist clientele to understand situations and solve their problems. Research is instrumental in identifying problems, program needs, target audiences, program implementation, and evaluation techniques. Extension Service is not a research agency but depends upon the Cooperative State Research Service, Agricultural Research Service, Economic Research Service, and other agencies to provide research to meet research needs of educational programs. Extension is knowledgeable of family problems and needs at the grassroots level. Extension serves in a linker role between the family and the researcher by communicating researchable family living problems to the researcher. Extension also serves in a linker role between the researcher and the user (family) by communicating and interpreting research findings to the families in terms families can understand and apply in solving their problems.

Women's participation in decisionmaking.—Finally, a broad objective of IWY is to ensure that women participate fully and as equal partners in policy formulation and decisionmaking at all levels of government.²² This objective is reflected in many areas of the Extension Home Economics program, particularly in public affairs, community development, and consumer education. More active involvement of women in government policy and decision making is a part of consumer education in Extension. It comes under the area of Consumer Rights and Responsibilities in which we encourage active and constructive citizen participation. In some States the Family Resource Management specialists have helped people become more participative, particularly in consumer organizations and consumer legislation. If we implement this objective to the fullest degree we would need to examine many of the present day decisions and actions to:

Identify the ways that government policies and decisions affect family life. A Family Life Task Force of the Home Economics subcommittee of ECOP (Extension Committee on Organization and Policy) is now developing strategies for the implementation of such a plan.

Communicate pertinent information to our clientele.

Teach women the skills and strategies needed to participate in government policy and decision making.

²² "International Women's Year Report," op. cit., pp. 17-18, 99-100.

Develop among clientele an understanding of how needs, concerns and recommendations at the local levels result in national policies and decisions.

A CHALLENGE

The decision as to how the objectives of IWY will influence direction of family living programs is a matter for each of us to consider and to discuss with professional colleagues, program leaders, administrators, and with program planners and families. Each of us has the opportunity to consider the goals and objectives of IWY and make the decision as to how we relate to them. Only by making choices can we as women participate fully and as equal partners in policy formulation and decision making. As you and I involve women in decision making and influence direction of the Extension Home Economics program in States and the USDA, at least one of the objectives of IWY—the objective of insuring that women participate in policy formulation and decision making—will have come a little closer to being a reality.

Each time I visit with a home economist or homemaker from a developing country or read a report such as the one developed at the 1975 IWY Conference in Mexico City, I reflect on the affluence we in America have enjoyed and which has been equalled in few countries of the world. In our affluent society of knowledge, skills, research, technology, and money, we have a level of living which exceeds that of many countries represented at the International Women's Year Conference.

The rapidity of change which we experience in this nation, the speed of transportation and communication systems provide us with instant access to both local and worldwide information. The increasing interdependency of nations and the effect that this has upon resources and the economy of this nation have direct impact upon families and their need for educational information. As we study the recommendations and plans developed at the IWY Conference, we recognize differences in situations and needs, yet there are many common concerns which exist among the women of the world.

We feel frustrated at times when we consider how far short our programs and resources are of being adequate to meet the needs of families. But when we compare programs and budgets in the United States with those in most developing and in many developing countries, we find that we are advantaged people. Recent information from the International Extension staff indicates that professional home economists employed to conduct family living programs in many developing countries are few or nonexistent. One reason for the low level of support given to women's programs is over-all scarcity of resources, but another more serious reason is the general lack of knowledge of benefits that could be provided by such programs. We have an opportunity and an obligation to show that programs for women and families can make an important contribution to the social and economic development of people. Evaluation of programs and reporting in terms of behavioral change of clientele reached are highly important in creating awareness of program accomplishments among clientele and decision makers.

We along with the women of the world have been challenged to implement action to improve the status of women and to overcome

major obstacles to the achievement of equal rights for women. Education and understanding are recognized as major factors in bringing about such change, and much remains to be done in the United States of America. The challenge is ours. How do we propose to respond?

AN IWY SOURCEBOOK FOR ACTION

A. GOALS AND OBJECTIVES OF IWY ¹

EQUALITY

1. To achieve full equality before the law in all fields where it does not yet exist.
2. To meet the health needs of girls and women equally with those of boys and men.
3. To develop and extend a network of health services for the protection of maternity and the health of mother and child.
4. To promote equality of economic rights.
5. To promote equality of rights and responsibilities in the family.
6. To ensure women as well as men to participate fully and as equal partners in policy formulation and decision-making at all levels of Government.

DEVELOPMENT

1. To improve the awareness of women in the developed countries towards the problems of women in the developing areas.
2. To improve the living and working conditions of both men and women throughout the world.
3. To improve the quality of rural life.
4. To improve the condition of rural women regarding training in cooperatives, modern agricultural and technical methods, vocational training, the use of modern labour-saving devices in homes and modern methods of child rearing.
5. To eliminate illiteracy and ensure equality of educational opportunities.
6. To encourage women to train for and enter non-traditional occupations, and provide proper guidance and counseling for this.
7. To provide training for women in all fields and help find employment for women after completing their training.
8. To provide social services for women.
9. To improve the situation of women in prisons and places of detention.
10. To combat racism and racial discrimination wherever it exists.
11. To combat exploitations of women and girls through illicit trafficking.

PEACE

1. To promote the peace efforts of women's groups and other organizations, and encourage through women the promotion of détente in the world, international peace and cooperation among States.

¹ Reprinted with permission from *Home Economics*, International Federation for Home Economics, Boulogne, France, June 1975, p. 11.

2. To encourage the participation of women in safeguarding peace so as to contribute to the advancement of the status of women and men.

3. To develop and implement standards to encourage peaceful relations among States on the basis of the principles of the United Nations Charter.

4. To facilitate the free flow of information among countries on the contribution of women and men to the promotion of peace.

5. To recognize the value of the untapped resources of women to contribute to national culture, development and spiritual values through their work.

B. IWY CONFERENCE RESOLUTION ON THE FAMILY²

THE WORLD CONFERENCE OF THE INTERNATIONAL WOMEN'S YEAR

Aware that the family is the primary and fundamental nucleus of society and fulfills its mission in an organized community,

Bearing in mind that it is the fundamental institution of natural origin, distinguished by its character as a community of unity, love and life, which forms its members in their individuality and serves as the first school of social relations,

Realizing that the family should be the place in which the cultural heritage of the past is transmitted and renewed in the interest of attaining the ideals of equality and freedom, peace and international justice,

Recognizing that it ensures the full protection of those of its members who are in the process of "formation", children and young people, and makes itself responsible for giving preferential attention to the elderly, in recognition of their contributions and experience, both present and past,

Noting that man and woman form two aspects of the same vital essence and, united, make human life possible.

1. *Urges* States to treat the family as an object of special protection and to recognize its rights with respect to its formation and its defense, establishing the legal equality of the spouses;

2. *Recommends* that States should guarantee the freedom of individuals and couples freely to decide the number and spacing of their children within the context of the national sovereignty of each country and of the interrelationship between the national sovereignty and social and economic factors;

3. *Suggests* to States that urbanization policies should be aimed at creating an atmosphere conducive to the strengthening of family ties and that community services should be aimed at the different generations in the family nucleus, thus helping to create true family communities;

4. *Expresses the hope* that States will recognize the family as one of the most important nuclei of society in the conviction that the members of the family, considered individually, cannot develop fully if their natural context, the family, is lost sight of;

² "International Women's Year Report," Fifty-ninth session, Agenda Item 5, of the Economics and Social Council, Mexico City, Mexico, July 1975. GE. 75-67445, p. 85.

5. *Recommends* that the family should be encouraged to play an active role by the granting to it of the right of direct participation in the work of bodies concerned with education and social services.

C. WORLD PLAN OF ACTION FOR THE IMPLEMENTATION OF THE OBJECTIVES OF THE INTERNATIONAL WOMEN'S YEAR (SELECTED EXCERPTS)

EDUCATION AND TRAINING ³

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67. Access to education and training is not only a basic human right recognized in many international instruments, it is also a key factor for social progress and in reducing the gaps between socio-economic groups and between the sexes. In many countries girls and women are at a marked disadvantage. This not only constitutes a serious initial handicap for them as individuals and for their future position in society; it also seriously impedes the effectiveness of their contribution to development programs and the development process itself.

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69. In most countries female enrollment at all levels of education is considerably below that of men. Girls tend to drop out of school earlier than boys. Boys are given precedence over girls when parents have to make a choice if education is not free. There is often discrimination in the nature and content of the education provided and in the options offered. Girls' choices of areas of study are dominated by conventional attitudes, concepts and notions concerning the respective roles of men and women in society.

70. As long as women remain illiterate and are subject to discrimination in education and training, the motivation for change so badly needed to improve the quality of life for all will fail, for in most societies it is the mother who is responsible for the training of her children during the formative years of their lives.

71. Governments should provide equal opportunities for both sexes at all levels of education and training within the context of lifelong education, and on a formal and non-formal basis, according to national needs.

72. The measures taken should conform to the existing international standards and, in particular, to the Convention and Recommendations against Discrimination in Education, 1960, and to the revised Recommendations on Technical and Vocational Education, 1974, of the United Nations Educational, Scientific and Cultural Organization.

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77. Integrated or special training programs should be developed for girls and women in rural areas to enable them to participate fully and productively in economic and social development and to take advantage of technological advances and thereby reduce the drudgery of their daily lives.

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79. In order to assist in overcoming high drop-out rates among school-age girls and to enable women to participate in literacy and

³ Ibid., pp. 18-20.

basic skills, programs, inexpensive child-care and other arrangements should be organized to coincide with school or training hours to free women and girls from confining domestic work.

80. Special programs for continuing education on a part-time basis should be arranged to ensure retention of what has been learned at school and to assist women in their family, vocational and professional activities.

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82. Textbooks and other teaching materials should be re-evaluated and, where necessary, rewritten to ensure that they reflect an image of women in positive and participatory roles in society. Teaching methods should be revised, wherever necessary, to ensure that they are adapted to national needs and promote changes in discriminatory attitudes.

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86. Girls and boys alike should be encouraged through vocational and career guidance programmes to choose a career according to their real aptitudes and abilities rather than on the basis of deeply ingrained sex stereotypes. They should also be made aware of the education and training required to take full advantage of the employment opportunities available.

87. Informational and formal and non-formal educational programmes should be launched to make the general public, parents, teachers, counsellors and others aware of the need to provide girls with a solid initial education and adequate training for occupational life and ample opportunities for further education and training. Maximum use should be made of the mass communications media both as a tool for education and as a means for affecting changes in community attitudes.

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HEALTH AND NUTRITION ⁴

108. While everyone has an undeniable right to health, conditions in many countries, and especially in rural areas, have often precluded the actual enjoyment by women of this right equally with men. The situation becomes more accentuated in societies with considerable shortages of health personnel and facilities and constitutes a high cost to the family, society and development by impairing the productivity of women. Women also need special care during pregnancy, delivery and lactation.

109. Adequate nutrition is of fundamental importance for the full physical and mental development of the individual, and women have a vital role to play in this area in the production, preparation, processing and consumption of food. When food is scarce women often experience more malnutrition than men, either because they deprive themselves for the sake of their families or because society places a lesser value on women.

110. Improved access to health, nutrition and other social services is essential to the full participation of women in development activi-

⁴ Ibid., pp. 22-24.

ties, to the strengthening of family life, and to a general improvement in the quality of life. To be fully effective these services should be integrated into over-all development programmes with priority being given to rural areas.

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117. In view of the importance of women not only as users but as providers of health care, steps should be taken to incorporate them as fully informed and active participants in the health planning and decision-making process at all levels and in all phases. Efforts should be made to encourage women to participate actively in community efforts to provide primary health care and improve coverage. Women should also be trained as paramedics and encouraged to organize health co-operatives and self-help programmes. Recruitment and training should be undertaken at the village level to prepare villagers as health workers to provide basic health services for their community.

118. Women should have the same rights of access as men to any training establishment or course for any health profession and to continue to the highest levels. Practices which exclude women from certain health professions on traditional, religious or cultural grounds should be abolished.

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120. In national food and nutrition policies Governments should give priority to the consumption by the most vulnerable groups in the population (adolescent girls, pregnant and lactating women, and young children) of certain types of food produce, such as milk and milk products, and especially nutritious foods. The practice of breast feeding and good feeding practices for the weaning period should be encouraged. Supplementary food programmes for mothers and children at imminent risk of malnutrition should be introduced. Nutritional deficiencies should be prevented through fortification of staples or other widely consumed foods or by direct distribution of the deficient nutrients.

121. Techniques and equipment for food processing, preservation and conservation at the local village level should be improved and made available to rural women. Co-operatives for the production, quality improvement and distribution of food should be organized to give impetus to this effort and, where appropriate, campaigns to educate the consumer should be organized.

122. Opportunities should be created for women to contribute more efficiently to the production of proper types of food through vegetable gardens in rural and urban areas and through the provision of better tools, seeds and fertilizer. Girls and boys should also be encouraged to grow food in school gardens to supplement daily school meal programmes.

123. Campaigns on nutrition education should be launched through the communications media to explore the most effective techniques for introducing previously unacceptable nutritious foods into the diets of people. These campaigns should also inform women how to use the family income most economically towards the purchase of more nutritious foods and to eliminate wastage of food. The exchange of experience on effective nutrition programmes through seminars, informal visits and publications should be arranged.

124. The institution of the family, which is changing in its economic, social and cultural functions, should ensure the dignity, equality and security of each of its members, and provide conditions conducive to the balanced development of the child as an individual and as a social being.

125. In the total development process the role of women, along with men, needs to be considered in terms of their contribution to the family as well as to society and the national economy. Higher status for this role in the home—as a parent, spouse and homemaker—can only enhance the personal dignity of a man and a woman. Household activities that are necessary for family life have generally been perceived as having a low economic and social prestige. All societies should, however, place a higher value on these activities, if they wish the family group to be maintained and to fulfil its basic functions of the procreation and education of children.

126. The family is also an important agent of social, political and cultural change. If women are to enjoy equal rights, opportunities and responsibilities, and contribute on equal terms with men to the development process, the functions and roles traditionally allotted to each sex within the family will require continual re-examination and re-assessment in the light of changing conditions.

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130. Legislative and other measures should be taken to ensure that men and women shall enjoy full legal capacity and the exercise thereof relating to their personal and property rights, including the right to acquire, administer, enjoy, dispose of and inherit property (including property acquired during marriage). Limitations, where such exist, should apply to both partners alike. During marriage the principle of equal rights and responsibilities would mean that both partners should perform an active role in the home, taking into account the importance of combining home and work responsibilities, and share jointly decision-making on matters affecting the family and children. At the dissolution of marriage, this principle would imply that procedures and grounds of dissolution of marriage should be liberalized and apply equally to both spouses; assets acquired during marriage should be shared on an equitable basis; appropriate provisions should be made for the social security and pension coverage of the work contributed by the homemaker; and decisions relating to the custody of children should be taken in consideration of their best interests.

131. In order to assist in the solution of conflicts arising among members of the family, adequate family counselling services should be set up wherever possible and the establishment of family courts staffed with personnel, including women, trained in law as well as in various other relevant disciplines should be considered.

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133. In recognition of the growing number of single-parent families, additional assistance and benefits, wherever possible, should be provided for them.

⁵ Ibid., pp. 24–26.

HOUSING AND RELATED FACILITIES ⁶

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148. The majority of women still spend more of their time in and around the house than do men; thus, the improvement of the house, its related facilities and its neighborhood will bring about a direct improvement in their daily lives. In addition to the considerations of health and comfort, well-designed and suitably furnished houses and related facilities, as well as neighborhoods, offer comparative relief from monotony and drudgery, making easier the pursuit of other interests and activities, and bringing women's lives closer to the demands of human dignity.

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150. The design of the house should take into account the needs of the entire family, especially the women and children. Use of the following should be encouraged: (a) building materials that require minimal or no maintenance; (b) equipment and appliances that do not present safety hazards; (c) labour-saving interior finishes and surfaces conducive to comfort and hygiene; (d) furniture that is movable, storable and easily replaceable; and (e) where feasible and appropriate, an area for women to undertake activities such as reading, sewing and weaving (in some societies this may be a communal space to increase social cohesion).

OTHER SOCIAL QUESTIONS ⁷

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154. Social services play a crucial role in anticipating social problems deriving from rapid modernization and industrialization and in reducing the need for remedial measures at a later stage. Women are usually affected by these social problems to a greater extent than men, especially in the initial stages of the development process.

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156. Special efforts should be made to provide for the needs of migrant women whether from rural areas or from abroad, and for women workers and their families who live in urban slums and squatter settlements. Training, job counselling, child-care facilities, financial aid and, where necessary, language training and other forms of assistance should be provided.

157. Special attention should also be given to the needs of elderly women, who frequently receive less protection and assistance than men. They predominate numerically in the age group of 50 years and over, and many are indigent and in need of special care.

⁶ Ibid., pp. 27-28.

⁷ Ibid., p. 29.

UNITED STATES AGRICULTURE IN THE WORLD

WHAT HAS HAPPENED SINCE THE WORLD FOOD CONFERENCE?

[By Nathan M. Koffsky, Former Director of Agricultural Economics, USDA]

It is now one year since the World Food Conference was held in Rome. To those who looked for instant solutions to the world food problems, where, in fact, instance solutions do not exist, progress since then has been disappointing. More realistically, considering the inherent difficulties of building international cooperation among 130 odd nations in any activity, whether it be food or energy or monetary arrangements, there have been positive developments which offer some basis of optimism for the future.

What did the World Food Conference accomplish?

First, cutting away the political bombast, which unfortunately pervades such gatherings, it did focus world attention on the immediate food crisis which existed a year ago and forced the realization that the situation in developing countries would get worse rather than better over the long run if it were left unattended. Perhaps it is too much to say that the developing world managed to scrape through a difficult time without major catastrophe because of the World Food Conference. But it did help stimulate action for a large increase in food aid, especially from the U.S.

Second, the Conference came to an agreed world food strategy. This consisted of three main elements:

1. The first priority was to increase food production in developing countries, particularly in poor, food-deficit countries. If trends continue as in the past, the shortfall in cereals in developing countries would be so large by 1985 as to make the transfer of enough food from developed to developing countries physically or financially impractical. Further, the main hope for alleviating malnutrition of vulnerable groups in the developing world—some 450 million persons, made up mostly of children and pregnant or nursing mothers—would have to come from increased food production and reduction of poverty in the country itself.

The assemblage recognized that to increase the rate of food production in developing countries from about 2½ percent a year (the historical rate) to the 3½ percent needed would require a greatly enlarged flow of external resources to developing countries for investment in land and water development, production inputs such as improved seeds and fertilizers, agricultural research, extension and education, etc. For this, the Conference recommend that a new Inter-

national Fund for Agricultural Development be established to augment the activities of existing institutions, such as the World Bank and the Regional Banks.

Additionally, it was recognized, unfortunately more widely by donor countries than by recipients, that in order for increased financial aid to be more effective, developing countries would need to improve their organization and management of agricultural policy and programs.

2. Next was the need to improve world food security by establishing grain reserves to protect against crop shortfalls in major producing areas so as to ensure availability of supply when needed and some stabilization of prices. The figure of about 60 million tons of food grains and coarse grains was in mind.

Improving world food security also involved establishing a Food Information and Early System under FAO to provide current information on production, stocks, requirements, etc. To be fully effective, this would require participation by the USSR which has been a major cause of instability in grain markets.

3. Until developing countries would be better able to take care of their own food needs, an increase would be required in the level of food aid to 10 million tons of grain annually on a 3-year forward planning basis. This would be more than double the level of food aid from both multilateral and bilateral sources at the time of the Conference.

As mentioned earlier, commitments for food aid have been increased—approached nine million tons for the current year.

The World Food Conference passed 22 resolutions containing over 100 recommendations to U.N. bodies and National governments pointed toward attaining these objectives and related matters. What really distinguished the Food Conference was the attention given to establishing the mechanism for follow-up actions to implement the recommendations of the Conference. Too often in the past, such Conferences have ended with declarations or resolutions with little subsequent activity.

The institutional frame for follow-up recommended by the Conference and subsequently adopted by the U.N. General Assembly is as follows:

1. At the top is the *World Food Council* consisting of 36 member States elected by the General Assembly to represent the various blocs; OECD, Socialist Nations, OPEC and non-oil developing countries. Fundamentally, the purpose of the Council is to generate the political will among nations to do what they have agreed to do with respect to the food problem. Each country is a sovereign nation and free to follow its own course. The function of the Council is to monitor and coordinate and follow up on policies related to all aspects of the food problem—food production, nutrition, food security, food trade, food aid—by all agencies of the U.N. system. It is to review major problems and policy issues, the actions proposed by governments and the U.N. system, and recommend remedial action.

The Council's first meeting at the end of June did not come to grips with its mandate. It was overrun by the confrontation from some in the developing world on the New International Economic Order. Perhaps the best that can be said of the meeting is that it helped clear the air. There is some evidence from subsequent develop-

ments that at the next meeting, which will probably be before mid-1976, a more reasoned approach may prevail so that the Council can get on with its work.

The Secretariat to service the Council is small, with only five or six professionals. It is also the Secretariat for the formation of the International Fund for Agricultural Development. Under the Council, several bodies have been given responsibility for certain functions and will report on progress to the Council.

2. *International Fund for Agricultural Development* with a target of augmenting external resources for agricultural development by one billion SDR's (or \$1.2 billion). Several meetings have been held including potential donors and potential recipients to decide how the Fund will be organized and operated. Most of the funds would be in the form of grants or soft loans to poor countries or to poor segments in developing countries. The final working level meeting is scheduled for the last week of January, with formal adoption of rules and operating procedures and pledging of contributions, hopefully, to take place in early February. The concept is that OPEC and OECD countries would each subscribe one-half of the funds and the Board of Directors would be shared equally by OPEC, OECD, and recipient countries.

In order to raise the rate of food production in developing countries to 3½ percent a year, external financial assistance would need to be increased from last year's level of about \$3 billion to about \$5 or \$6 billion a year. With increased emphasis on agriculture by both international financial agencies and bilateral aid programs, the additional resources of the Fund could well bring this target into view. The Fund would be particularly important for those poor countries which require concessionary loans or grants.

3. *Consultative group on Food Production and Investment*, which is headquartered in the World Bank has three main functions:

- a. to encourage a larger flow of external resources for food production,
- b. to improve coordination of multilateral and bilateral aid,
- c. to ensure more effective use of available resources.

This group had its first meeting in July and will hold its next in February. Its first emphasis is on Investments required for seed and fertilizer production and distribution. It has been asked to identify developing countries with possibility for rapid expansion of food production and to estimate the investment requirements.

4. *Consultative Group on International Agricultural Research*, also headquartered at the World Bank, selects research priorities with the help of its Technical Advisory Committee and raises funds for international research centers. The Conference asked that the group also turn its attention to strengthening national research programs. This group meets each July. At its last meeting, it arranged \$62 million of financing for 12 activities, a far cry from the \$9 million required to support four international centers 5 years ago. Most of the ecological zones and essential food crops of the developing world are now covered by the international research system.

5. *FAO Commission of Fertilizers* reviews the world fertilizer situation particularly as it affects developing countries and, through

the International Fertilizer Scheme, arranges to help developing countries obtain needed supplies. Multilateral aid channels provided about 20 percent of fertilizer aid last year while bilateral programs supplied the rest. This Commission was requested to consider a similar program for pesticides.

6. *FAO Committee on World Food Security* is primarily concerned with the reserve grain stock issue. An ad hoc meeting in June at FAO did not get far. Other forums are also considering proposals. At present, the most promising is consideration in the International Wheat Council of the U.S. proposal for a reserve of 30 million tons of wheat and rice. The IWC meeting in September still left some knotty issues to be resolved such as conditions for release or accumulation of stocks, price stabilization and cost sharing. As Assistant Secretary Bell stated yesterday, although world grain production is higher this year, carryover stocks next year will probably be somewhat smaller and scraping along at minimum working stock levels. The potential threat to world food security is still undiminished.

7. *FAO* has begun to implement the Global Information and Early Warning System, and periodically informs the World Food Council on the world food situation.

8. *Committee on Food Aid Policies and Programmes* is an expansion of the functions of the Inter-governmental Committee of the World Food Programme. It is to provide for improved coordination between the multilateral food aid and the much larger bilateral food aid programs, and to recommend to governments via the World Food Council improvements in food aid policies and programs. It is expected that authorization for this committee will be forthcoming from the current sessions of the FAO Conference and the U.N. General Assembly.

9. *United Nations Conference on Trade and Development* is requested to inform the World Food Council on the world food trade situation, and on progress to increase trade liberalization and access to international markets for food products exported by developing countries. This awaits substantive results from negotiations under way at GATT.

10. *Nutrition*. Many U.N. agencies are involved in nutrition programs, WHO, FAO, UNDP, The World Bank, etc. These agencies have begun to map out a coordinated approach to integrating nutrition in planning for development, and in coordinating research. This is a prelude to actual programs to alleviate malnutrition.

So the picture that emerges is one of piecemeal progress and slow and difficult inching forward. Measured against the urgency of the problem and the World Food Conference goal that "within a decade no child will go to bed hungry, that no family will fear for its next day's bread, and that no human being's future and capacities will be stunted by malnutrition," performance has clearly been unsatisfactory.

But looked at in another way against the years where concern for the world food problem on an international level was not much in evidence and where there was little agreement on what to do about it, we have come at least to the beginning of the beginning. Also as a plus, the institutional mechanism for implementation is in place and

beginning to work. If the political will can be mobilized by the World Food Council—things could move much faster in the future.

Whether the World Food Council can come up to its responsibilities depends substantially on the posture of the United States. This country is the world leader in the matters of concern to the Council—food production, food trade, food security and food aid. Without the United States, nothing will move.

The basic source for optimism as to the future in dealing with the world food problem is that the U.S. has come forward as the leader in this international effort. This comes out of the statement of the Secretary of State on behalf of the President to the Special Session of the U.N. in September that the U.S. intends to contribute to the International Fund for Agricultural Development (an action affirmed in Congress), that it will maintain a high level of food aid, and that it is prepared to take on a substantial part of the burden in establishing a reserve stock of wheat and rice so that the world can edge away from living hand to mouth.

No one thinks that the struggle to eliminate hunger will come easy either in the political arena or on the millions of holdings in developing countries where the ultimate solution lies. I doubt that the high hopes of the World Food Conference, that no child will go to bed hungry or that no family will fear for its next day's bread, will be realized within a decade. But maybe there will be fewer who do as a result of what the International Community does from this time forward.

MTN: THE STATE OF PLAY IN AGRICULTURE

[By Ernest Koenig, Agricultural Attaché, U.S. Mission, Geneva]

It is a great pleasure to be here and to learn from so many knowledgeable people about the agricultural outlook. My presence here may give you less pleasure and fewer insights than I can derive from the remarks of others because he would be a bold man, indeed, who would dare to project the outlook for agriculture in the MTN. However, I have a good and credible excuse for hesitating to indicate what the MTN may hold in store for U.S. agriculture: if anything is certain with regard to these negotiations, it is the fact that they will not be concluded at the time of the next Outlook Conference. Hence my remarks must by necessity be descriptive rather than predictive. For nobody here is expected to make a long-term forecast.

The difficulty of projecting the future course, let alone the final outcome of the MTN, results from the fact that, unlike the outlook for a given commodity which can be gauged on the basis of discernible (though not necessarily unmistakable trends), the outcome of a negotiation in which 90 countries participate depends on the whims and wills of the countries and governments involved. Their collective attitudes do not admit of a prediction or a projection.

There are, however, certain facts of which it can be said with certainty, that they will strongly influence these negotiations throughout their duration. These are the state of the world economy; the predominance of LDC's among the participants in the MTN; and the paramount role which the EEC plays in these negotiations. These facts have no precedents in previous negotiations.

All previous GATT trade negotiations have taken place in a climate of high economic activity. This negotiation takes place in the midst of a worldwide recession. Hence, the future course of these negotiations and the general willingness to liberalize and rationalize international trade will largely depend on whether international business activity in the near future will be expanding, stagnating, or shrinking.

The predominance of LDC's among the negotiating parties represents another innovation in these negotiations. These countries consider not only better but also guaranteed preferential access to the markets of developed countries as vital for their future development and well-being and as a condition *sine qua non* for their participation in these negotiations. By the same token, they do not expect that the concessions they are seeking will require full reciprocity on their part.

The participation of the enlarged EEC is another first in the history of international trade negotiations. It is true, the EC has also participated in the Dillon Round and in the Kennedy Round. But

since then, the EC has been enlarged. It has established special preferential trade relations with the rest of Western Europe, with the Mediterranean countries, and with a great number of developing countries, the so-called ACP countries. Moreover, the share of the EEC in world trade has been growing and the EEC is at present by far the largest trading unit in the world. Because of its great importance in world trade and because of its special relations with so many other countries, the EEC counts most importantly in these negotiations. The prominence of the EEC, the U.S., Japan and Canada in world trade imparts to these multilateral negotiations strong bilateral or plurilateral undertones because issues often polarize among these major trading countries.

At the present stage the MTN take place in a number of groups or committees. There is a group dealing with tariffs, another group dealing with non-tariff measures which, in turn, is subdivided into subgroups: one of these subgroups aims at establishing a so-called standard code, that is a code of behavior for dealing with technical obstacles to trade. Another non-tariff measure subgroup deals with quantitative restrictions and licensing procedures. Still another of these subgroups deals with the all-important question of subsidies and countervailing duties. There is, furthermore, a group dealing with sectors, a group on customs procedures, a group on safeguard measures and a group on tropical products.

All these groups, except the tropical products group, deal at present with global or functional issues rather than with specific commodities. For instance, in the Tariff Group the work consists in searching for a general formula according to which tariff cutting would occur. In the subgroup on subsidies and countervailing duties efforts are being made to elaborate general principles which would govern the use of subsidies and countervailing duties.

In addition to these negotiating groups there is a "Group Agriculture" with three subgroups—one for grains, the other for meat and the third one for dairy products.

The Agriculture Group and its subgroups are primarily commodity orientated. The divergencies in the agricultural groups are much more pronounced than in the other groups.

Agriculture plays a major role in the MTN. This is natural because agriculture is of major importance in world trade and because international trade with agricultural products is of vital importance to many countries—developed or undeveloped, exporting or importing countries.

Negotiations on agricultural matters have been one of the most dynamic aspects of the MTN to date. In the Grains, Meat and Dairy Subgroups, countries have not only examined general trade issues but also have presented some of their explicit negotiating objectives. They have entered into vigorous discussions on the merits and demerits of each other's concepts. However, the dynamic aspects of the agricultural negotiations are also reflected in the fact that agriculture is one of the most contentious issues in the MTN and has led repeatedly to procedural impasses. The procedural difficulties which we have encountered in the agricultural negotiations turn exclusively around the question of the link between industrial and agricultural negotia-

tions. The problem is protracted and at times obscure. To understand it fully, one has to go back to the very beginnings of the MTN, to the Tokyo Declaration, the Magna Charta of the MTN.

The Tokyo Declaration was accepted by some of our partners only on the condition that "as far as agriculture is concerned the negotiations should aim at an approach which, while in line with the general objectives . . . should take account of the special characteristics and problems in this sector." The explicit meaning given to this rather obscure phrase is that agriculture is a sector different from industry and should therefore be treated in separation from the rest of the negotiations. Our Trade Act, on the other hand, requires that "to the maximum extent feasible, the harmonization, reduction and elimination of agricultural trade barriers and distortions shall be undertaken in conjunction with the harmonization, reduction or elimination of industrial trade barriers and distortions." The difference in views between the U.S. and our partners, primarily the EC, turn on the interpretation of "in conjunction with" i.e., on the link between the negotiations on agriculture and industry, and has become one of the major procedural issues in the MTN on agriculture.

The EC has never coherently explained why it considers agriculture to be a special subject which requires special negotiating procedures. However, on the basis of isolated remarks made at various occasions, by EC spokesmen and others, one may interpret their position as follows: They take the view that in agriculture, unlike in industry, the adjustment of supply and demand, in other words, market stability, is difficult to achieve; that agricultural incomes, unlike those in other sectors of the economy, are to the largest extent determined by public transfer payments; and that agriculture has unique sociological and political characteristics which make it a special subject.

These arguments are either untenable, or if tenable, irrelevant for the purpose at hand, that is multilateral trade negotiations. The present recession shows that market stability in the non-agricultural sector is at times as difficult to achieve as in agriculture. Widespread government aid to ailing industries in the major European countries refutes the assertion that only agricultural producers benefit from public support payments. (Let alone the fact that the American farmer at present derives the overwhelming part of his income from the market and has never been as fully supported by the public authorities as the European farmer.) The thesis that agriculture has unique sociological and political problems is ludicrous in view of the social and political problems resulting, for instance, from widespread industrial unemployment. Thus the arguments used to prove that agriculture has special characteristics and that it cannot be subjected to the same negotiating processes as non-agricultural commodities are fallacious. As a matter of fact, these propositions go even further: they are intended to prove that owing to its special characteristics agriculture requires special domestic support; that domestic support and measures of border protection are identical and that, consequently, measures of border protection are not negotiable. On the other hand, export subsidies which, as we so well know, distort international competition, are said to be indispensable for the support of agriculture and hence fully legitimate. Thus the attempt is being made to lay

the foundation for a doctrine which denies the possibility of liberalizing and rationalizing world agricultural trade.

By contrast, our point of view is that a market-orientated farm economy implying better access, freer competition and less interference with market forces is fully compatible with the legitimate protection of domestic farm interests. If the U.S. view were incorrect and the EC view were driven to its ultimate conclusion, it would logically follow that the results of all previous trade negotiations represent a grave error and should be undone. Surely, our trading partners would not like to see the United States abolishing the agricultural concessions which we have made to them as little as we would like to see the withdrawal of the concessions which we have obtained in the past.

In reality, a trade negotiation is not a dispute about economic doctrines. Such doctrines may be sometimes used to strengthen and embellish a bargaining point. But they are not the essence of a negotiation.

As mentioned before, a lot of work has been accomplished in the agricultural subgroups. However, the Agriculture group itself, the parent Group of the three subgroups, is continually plagued by procedural questions: the debate—for the reasons mentioned before—turns around the competence of this group: whether it should be exclusively competent and hence autonomous as far as agricultural problems are concerned, or whether—as we see it—the Agriculture group should collaborate with the functional groups so that agriculture be not isolated from the rest of the negotiations. The U.S. delegation in all the MTN groups—the functional groups and the agricultural groups—defends, of course, vigorously the view that there must be uniform negotiation rules and procedures encompassing all and every product within the purview of these negotiations.

Why do we as well as our partners attach such great importance to rules and procedures? The answer is simple: The rules of the game determine its outcome. Procedure is substance. It is for this reason that the philosophical differences and the doctrines regarding the relation between domestic farm policies and international trade policies which are introduced in the Geneva debates should be taken for what they are: they are debating points to strengthen bargaining positions.

The frequent impasses to which these differences lead should not be overdramatized. These impasses are also part of the game. They are the challenges attending a negotiation as broad in scope, as important and as complex as the present MTN. Impasses are often deliberately created. They do not signify that the players do not wish to play; they constitute maneuvering for negotiating advantages.

Indeed, all the countries in these negotiations do participate because they have firmly committed themselves to carry out these negotiations by adhering to the Tokyo Declaration. The goal of this Declaration to which everybody has subscribed is the liberalization and even greater expansion of world trade in industry and agriculture.

Permit me to address myself in conclusion to a question that is frequently heard. World demand for our agricultural products continues to be strong and may continue to remain so in the near future. Why do we need these trade negotiations? In answering this question

let us remember that the United States, the largest agricultural trade nation in the world, faces foreign import restrictions on several times the volume of trade that is affected by U.S. import restrictions.

The MTN's are intended to give us better trading opportunities abroad. If successful, these negotiations will lead to reciprocal engagements which give contractual assurances for better competitive conditions than would be the case in the absence of these negotiations. Thus the benefits which we may derive from these negotiations will be long lasting and must be viewed from a long term point of view.

Let me illustrate this point by a single but most telling example. Our soybean exports today amount to many times the volume of what they were 12 to 13 years ago. This is in no small measure due to the foresight of our negotiators in the Dillon Round who obtained zero tariff bindings for this important product. Had these trade concessions not been obtained, other governments would have felt free to impose variable levies or similar devices on imports of U.S. soybeans with the result that neither our exports nor our production of soybeans would have reached the levels they actually reached.

Thus let me conclude : U.S. agriculture has a big stake in the MTN.

COMMODITY OUTLOOK

OUTLOOK FOR WHEAT

[By Frank Gomme, Commodity Economics Division,
Economic Research Service, USDA]

The wheat outlook features a record crop, prospects for record exports, and the fourth consecutive year of strong wheat prices. Farmers and the wheat industry are adapting to a world dominated by large exports, widely fluctuating crop prospects, exceptionally strong wheat prices and new levels of uncertainty. The past 3 years have also seen a switch from concern about wheat surpluses to worry about the adequacy of supplies. The only certain thing about the outlook is its uncertainty.

WHEAT SUPPLIES LARGEST SINCE THE EARLY 1960'S

What does the tenth largest seeded wheat acreage and the third highest yield on record add up to? A record 1975 U.S. wheat crop of 2,138 million bushels, 19 percent above the previous peak set only last year.

July 1 wheat stocks of 320 million bushels registered some recovery from the preceding summer's 26-year low. On the strength of the record crop, 1975/76 supplies rose to nearly 2.5 billion bushels, the largest since the "huge surpluses" of the early 1960's. At that time, stocks accounted for a large part of the wheat supply, while in 1975/76 stocks make up less than 15 percent of the total. In the earlier period a significant part of the total supply was owned by CCC or under price support loan. This year less than 1 percent of the supply is tied up.

DISAPPEARANCE SURGES

A slight recovery appears to be developing in the domestic use of wheat this year but the real news is on the export side.

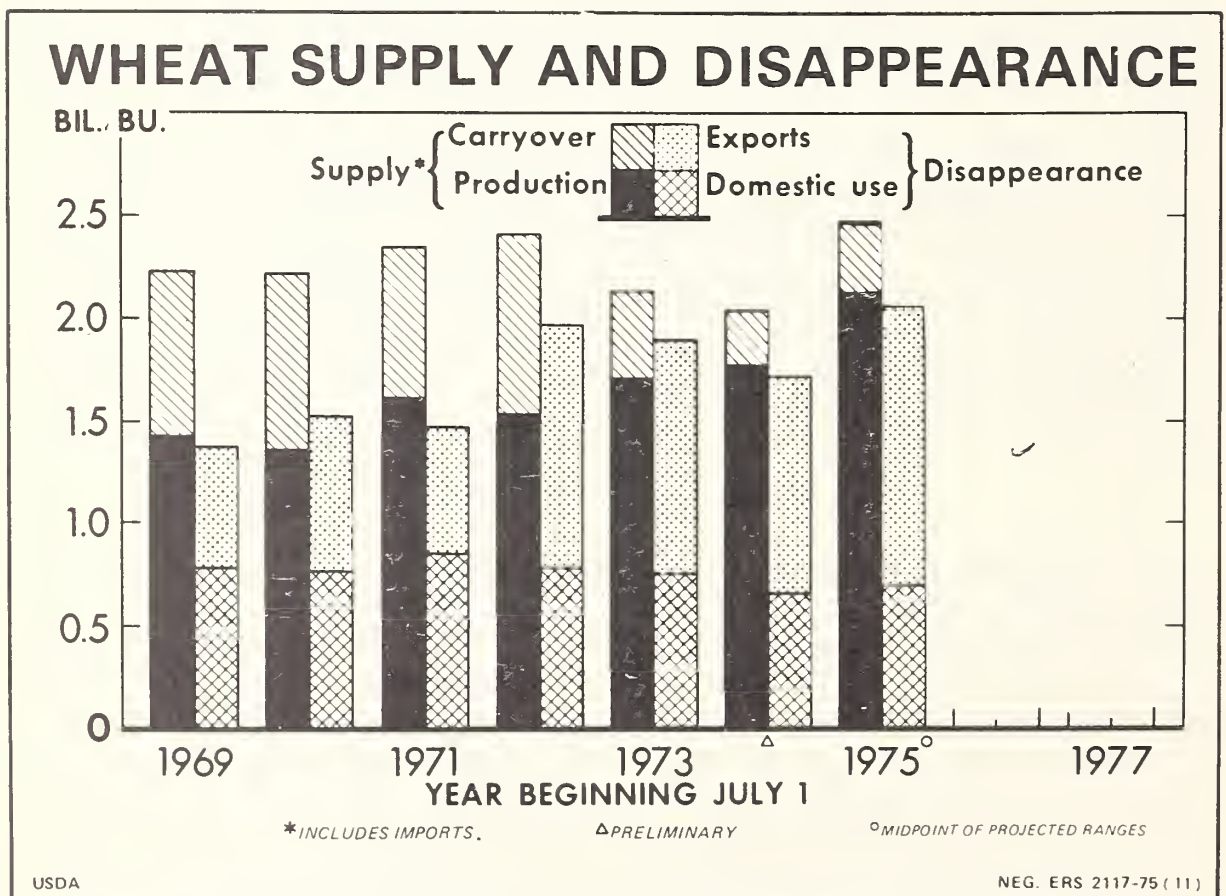
Exports in July-September rose to about 350 million bushels, a level exceeded only in 1973/74. But what about the rest of the year? Forward sales as of October 1 totaled only around 360 million bushels, the smallest for that date since the export reporting system was initiated in 1973. Despite the fact that world wheat trade is forecast to be record large this year, many countries appear to be in no hurry to buy but instead are choosing to make modest purchases while watching market developments. Also the United States had assured traditional customers that they will have access to our wheat supplies,

which may have lessened the intensity of early season demand. The slowness in the export sales also reflects the fact that outside of the USSR world import demand for wheat is down.

U.S. export sales for the entire crop year are currently forecast in a range of 1.3–1.4 billion bushels. This would be a new record high and would account for almost 50 percent of the world's trade in wheat. However, a number of factors are contributing to some uncertainty surrounding our export prospects. So far this year, the USSR has purchased slightly over 4 million tons (154 million bushels of U.S. wheat. Their crop continued to deteriorate but it is still unknown how much additional wheat they will buy from the U.S. Recent post-moratorium sales to the USSR were exclusively corn. The two major Southern Hemisphere exporters, Argentina and Australia, are predicting greater export availabilities than earlier thought. And of course, the level of world wheat prices in the months ahead could affect the demand for wheat in many of the smaller importing countries.

Although the recovery in domestic use is far less spectacular than in exports, it has still been a pleasant surprise. Domestic mill grind during the early part of 1975/76 is running about 10 percent ahead of a year ago's pace. Is this the harbinger of a pickup in wheat food use or will the pace of grind drop later in the season?

The past 2 crop years have seen unusual fluctuations in mill grind because of inventory adjustments and sharp changes in wheat and flour prices. Higher wheat prices and interest rates have pushed up



the cost of carrying wheat and flour inventories. Consequently, mills and flour users have shaved inventories, reducing their ability to meet any unexpected surge in demand. As prices of raw materials (sugar, vegetable oil, and flour) eased, promotional sales and discounts and lower prices on wheat based foods became more common. Apparently consumers have responded to the economics of the marketplace and are buying more wheat products. Perhaps part of the increase may also be an attempt on the part of the flour milling and consuming industries to rebuild flour inventories. Even if the rate of grind falls off later in the year, food usage for the entire year could climb modestly to 530 million bushels.

Wheat feeding is up slightly from a year ago's levels but is still well below usage during earlier heavy feeding years. For the entire year wheat feeding should show some pickup from last year's level and may range between 75-100 million bushels, depending on the extent of the recovery of the feeding industry and how competitive wheat is with feed grains for the remainder of the year.

If demand for the remainder of the year comes up to expectations, the buildup in wheat stocks will be relatively modest. From 320 million bushels as of July 1, 1975, stocks could rise to 365-440 million by next summer.

WHEAT PRICES STAGE RECOVERY

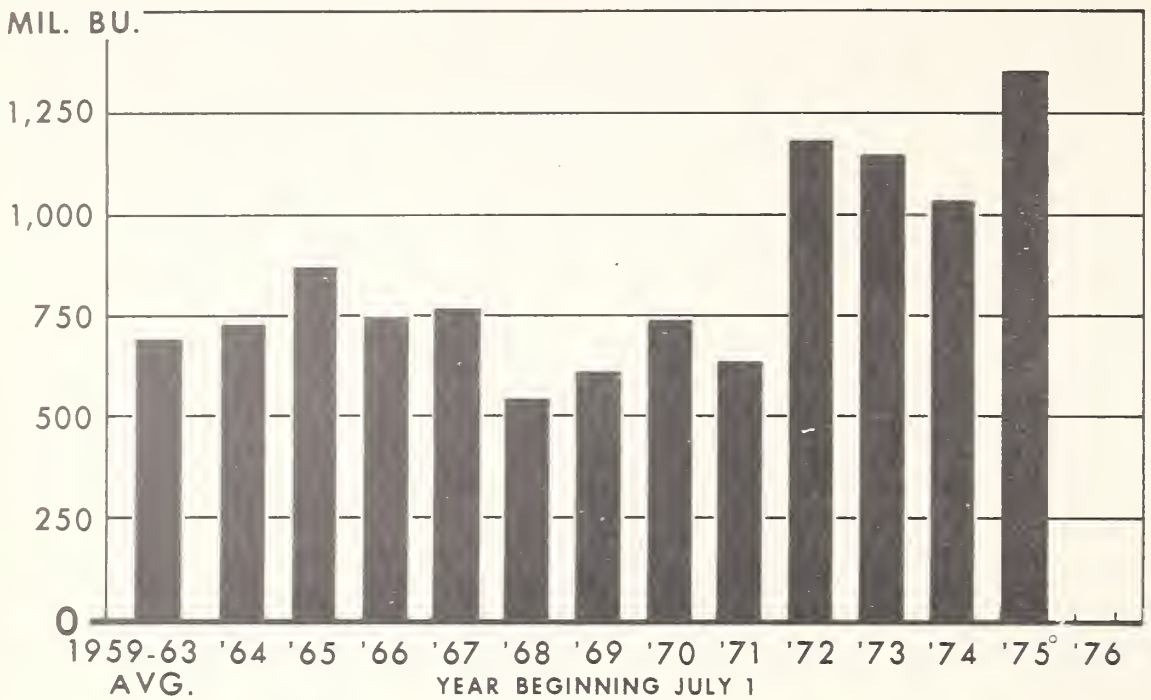
Early last summer the marketplace, facing a record 1975 wheat crop matched against only a modest 1975/76 demand, pushed new crop wheat quotes to below \$3 per bushel. But the return of the USSR to our wheat market and some deterioration in world crop prospects elsewhere quickly added over a dollar a bushel. In mid-September and mid-October, wheat averaged over \$4 at the farm. Wheat prices at the farm were averaging below \$4 in early November. Prices are expected to continue strong for the remainder of the year but the absolute level will depend on the following factors:

(1) The pace of export commitments. Although export shipments were heavy during July-September, forward sales are lagging. These sales must pick up sharply if the projected exports are to be obtained. The longer these sales take to materialize, the less their influence on the marketplace, although they would still tend to moderate the normal late season price decline for old crop wheat.

(2) Farmers' marketing strategies. Farmers have influenced market prices through "orderly marketing". As prices rise to some "trigger" level, it appears that farmers' marketings step up quickly. But as prices drop off, growers retrench and await another rise.

(3) Many farmers receiving good returns for the portion of their crop sold to date may postpone further sales until the new tax year starts. This could tend to have a bearish impact on the market price after January 1.

U.S. WHEAT EXPORTS*

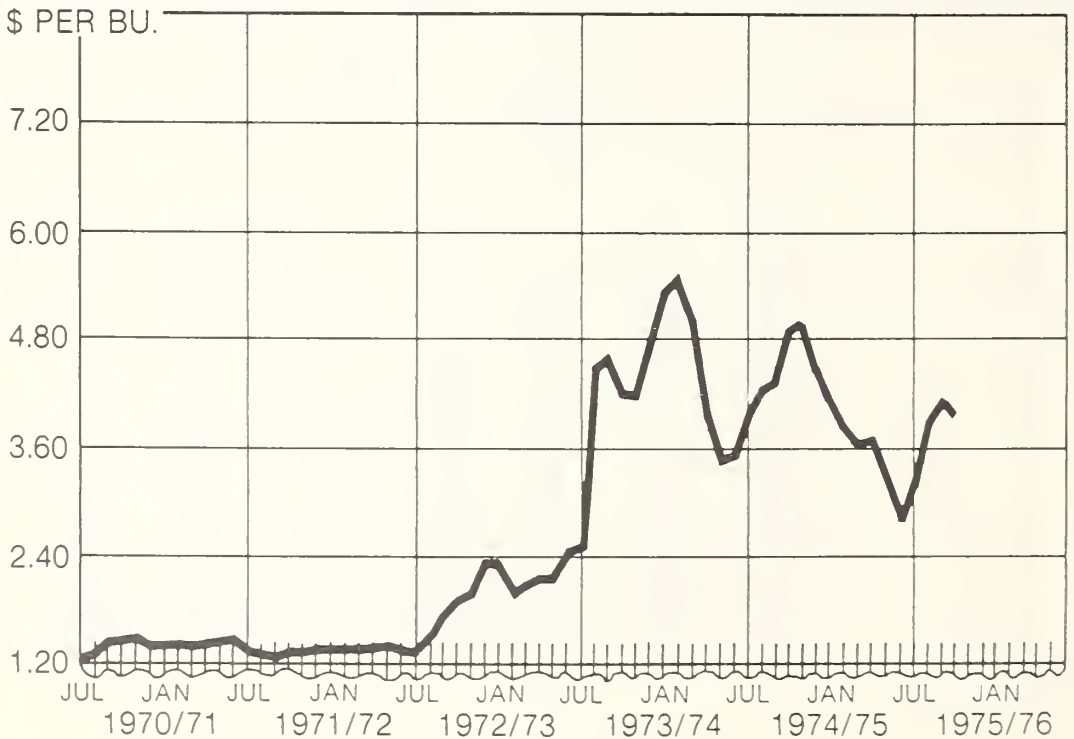


*INCLUDES FLOUR AND OTHER PRODUCTS IN TERMS OF WHEAT. °MIDPOINT OF PROJECTED RANGES.

USDA

NEG. ERS 232 - 75 (11)

WHEAT PRICES RECEIVED BY FARMERS



USDA

NEG. ERS 891 75 (11)

(4) 1976 crop developments. After the 1975 crop experience, most market watchers will keep a close check on the developments of the 1976 world winter wheat crop. Some warning signs are already up in the United States and USSR as parts of the major winter wheat areas have been dry.

Wheat prices likely will continue to fluctuate in the area of \$4 a bushel in the near term. If the pace of sales picks up appreciably and exports seem headed toward the top side of the range, prices could strengthen some. This would probably result in a season average to farmers not too much different from the \$4 per bushel level of the past 2 years. However, if export sales drag, the early season lows combined with some weakness in prices for the second half of the crop year would push the season average closer to \$3.50–\$3.75 per bushel.

SHIFTS IN PRODUCER MARKETING PATTERNS

There appears to be some evidence that farmers' marketing strategies have changed markedly. The lack of use of the loan program is one sign. Changes in the loan program which allow participants to keep their grain under loan 12 months after placements permit more flexibility than previous maturity provisions. On the other hand, charging loan participants interest rates at the cost of money to CCC (currently 7.5 percent) has lessened the program's attractiveness as an alternative source of credit.

Another important factor has been the market situation—relatively tight supplies and widely fluctuating prices. There has been much discussion devoted to the "orderly marketing" of grain. Some reports indicated that growers were shifting marketings from harvest, the period of usual seasonal price lows, to later in the year in an attempt to take advantage of market impacts from post-harvest foreign purchases. Also, growers are setting price objectives and are holding until the market triggers sales. A recent report provides clues to changes in the farmers' marketing patterns.

The winter wheat harvest in Nebraska usually begins around July 1 with the heaviest cutting falling in the first half of the month. Traditionally a fourth or more of the crop has been marketed in July. August and September are also big sales months, reflecting farmers' marketing after commercial storage privileges have been exhausted.

But patterns have decidedly changed in recent years. Less wheat is being sold in July and more during August–October. After October, sales resume a fairly normal pattern. It appears that growers are looking back at the previous year's experience and are sellings on sharp price changes. Marketings in early 1974/75 were especially strung out.

Whether the 1975/76 sales pattern is similar to that of the 1960's, or more recent years, is hard to determine at this time. Prices have strengthened from harvest lows much as they did in the 1972/73 and 1973/74 crop years. This suggests that farmers may have sold moderate quantities at harvest and then made additional sizable sales in August and September as prices rose. If history is repeated, marketings will return to a more normal pattern now, with a possible bulge in January as farmers take advantage of the new tax year.

It is likely that the changes in marketing patterns for Nebraska have been mirrored in most of the major wheat States. The timing varies by the start of harvest or the amount of storage available, but it seems clear that U.S. wheat producers have changed their marketing habits.

OUTLOOK FOR WINTER WHEAT

A number of factors will influence the acreage seeded to wheat for harvest in 1976. They include:

- (1) The third consecutive year of a wheat program with no planting restrictions.
- (2) A national allotment set at 61.6 million acres, up 8 million from a year ago. This is not a limit on plantings but a basis for making payments if needed.
- (3) No conserving base requirements for 1976 crops.
- (4) A generally improved supply situation for fertilizer and pesticides.
- (5) The level of wheat prices relative to other grains and relative to the cost of production.

Winter wheat producers were observing a strong wheat market during the August–October planting decision period, although returns to wheat in some areas may not have been as favorable as they were during the fall of 1974.

Winter wheat seedings were generally completed by early November. Dry weather held up seedings in some areas and early stands were spotty in many areas. The winter wheat area has seen a 30-percent increase in planted acreage since 1972. Thus, any increase in 1976 planted area would likely be small.

The spring wheat producer has a number of months to study the market before he must make his final planting decision. Last spring he was faced with a declining market at planting time but still planted almost as much as the large 1974 acreage. His actions this next spring will depend on the price outlook and the weather. Although the outlook is uncertain at this time, it would seem unlikely that spring wheat planting would vary much from the 1975 level. In summary, planted acreage for all wheat in 1976 should total quite near this year's 74.4 million acres.

WORLD WHEAT SITUATION

The 1975 world wheat crop, currently estimated at close to the 1974 level of 350 million tons, is well below early season expectations. The USSR has accounted for most of the decline with the current estimate of 75 million tons, over a third below the original level planned for the 1975 crop. Bumper crops in Canada, the United States, Argentina and a good harvest in Australia are holding up the world's exportable supplies. This is matched against a world demand for wheat in 1975/76 which is off outside of the Soviet Union. World trade in wheat for 1975/76 is projected at 75 million tons, about a tenth above a year ago.

WHEAT BY CLASS

The scenario for the wheat classes this year is generally one of abundant supplies, some recovery in demand, especially on the export side, below average quality again for the hard protein wheats, and minimum increases in stocks.

HARD WINTER

A record shattering harvest of 1,050 million bushels is pushing total supplies above 1.2 billion bushels. The early concern about the large supplies of yellow hard have been resolved by industry adjustments and the past harvest flow of hard and dark hard winter to the marketplace. Domestic use may fall somewhat below last year's 300 million bushels. Large sales to the USSR along with heavy purchases by other customers should push exports to a high of around 700 million bushels. But year ending stocks may still be roughly a fourth above the July 1, 1975 level of 180 million bushels.

HARD SPRING

This year's crop of 336 million bushels is 15 percent larger than last year's harvest but the average protein content is down again. The availability of the higher protein springs appear to be particularly affected this year. Mill demand for HRS appears strong because of the below average protein of the HRW crop. Exportable supplies are quite large but another strong export year is expected to limit any buildup in stocks.

RED WINTER

Possibly the largest SRW acreage on record plus good per acre yields pushed this year's SRW crop to a record shattering 347 million bushels. The record supplies have pushed market prices of SRW below those for most other wheat classes. Feed use is up this year and an apparent recovery in the consumption of wheat foods, particularly sweet baked goods, suggest a stronger mill grind this year. Import demand has been strong, reflecting the price spread between SRW and the other classes. Most of this year's record crop is expected to have moved into consumption by year's end, limiting any buildup in stocks.

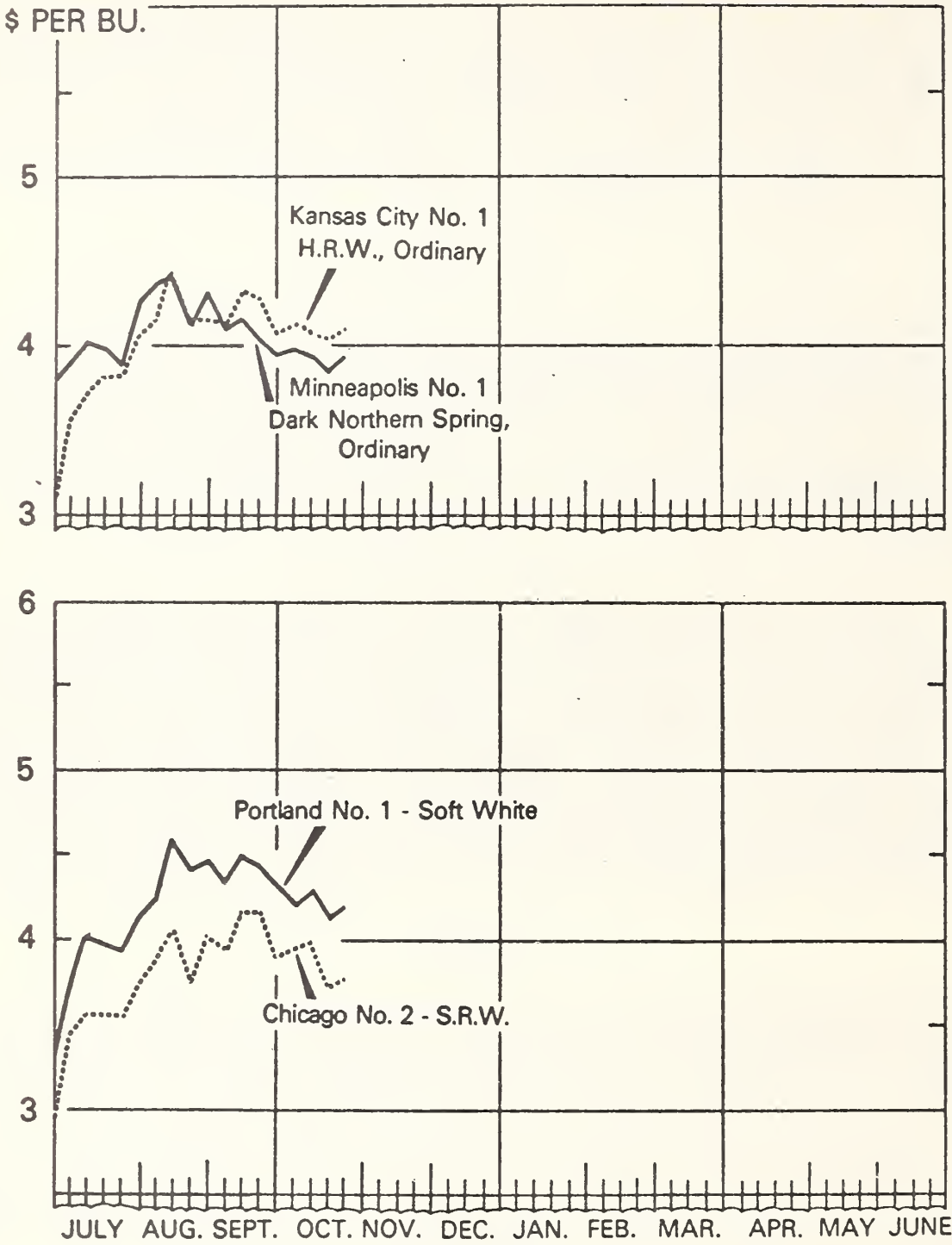
DURUM

The record 1975 durum crop, estimated at 121 million bushels, is over 50 percent larger than last year's weather stricken harvest. This comes in the face of a questionable demand. Durum mill grind continues to lag, reflecting the wide price spreads between semolina and the competing hard wheat flours. The early export pace has been good but prospective shipments for the year are not too much above last year's 50 million bushels. Consequently, 1976 year ending stocks may climb to around 40 million bushels, double this summer's level.

WHITE WHEAT

Despite a shaky start and a weather plagued harvest, the 1975 white wheat crop yielded a record 282 million bushels. Domestic use appears to be recovering after last year's slump with both feed use and mill grind expected to be higher. The strong tone of this year's world import market would seem to indicate that white wheat exports could well exceed last year's 200 million bushels, thus limiting any buildup in wheat stocks this year.

CASH WHEAT PRICES, 1975/76*



* THURSDAY PRICE.

TABLE 1.—WHEAT: SUPPLY, DISTRIBUTION, AND PRICES, TOTAL AND BY CLASS JULY-JUNE AVERAGE 1965-69 AND ANNUAL 1972-75¹

Item and year	Average 1965-69	1972-73	1973-74 preliminary	1974-75 forecast	1975-76 projected
Million bushels:					
Beginning carryover.....	626	863	³ 438	247	320
Production.....	1, 426	1, 545	1, 705	1, 793	2, 138
Imports ²	2	1	4	2	1
Total supply.....	2, 054	2, 409	2, 147	2, 042	2, 459
Food ⁴	515	528	528	525	530
Seed.....	65	67	84	87	87
Feed (residual) ⁵	128	190	140	71	102-77
On farms where grown.....	(46)	(47)	(31)	(34)	-----
Domestic disappearance.....	* 709	785	752	683	719-694
Exports ²	705	1, 186	1, 148	1, 039	1, 300-1, 400
Total disappearance.....	1, 414	1, 971	1, 900	1, 722	2, 019-2, 094
Ending carryover.....	640	438	247	320	440-365
Privately owned—Free.....	(194)	(227)	(228)	(318)	-----
Dollars per bushel:					
Price support:					
National average loan rate.....	1. 25	1. 25	1. 25	1. 37	1. 37
Average certificate payment.....	. 54	. 47	. 21	-----	-----
Season average price received:					
By nonparticipants.....	1. 37	1. 76	3. 95	4. 04	-----
By program participants ⁶	1. 91	2. 23	4. 16	4. 04	-----
	Hard winter (million bushels)	Red winter (million bushels)	Hard spring ⁷ (million bushels)	Durum ⁷ (million bushels)	White ⁷ (million bushels)
1972-73					
Beginning carryover.....	471	18	275	69	30
Production.....	761	226	276	73	209
Total supply.....	1, 232	244	552	142	239
Domestic disappearance.....	327	168	181	40	59
Exports ²	704	68	198	65	151
Total disappearance.....	1, 031	236	379	105	220
1973-74					
Beginning carryover.....	201	8	173	37	19
Production.....	957	159	328	79	182
Total supply.....	1, 158	167	503	117	202
Domestic disappearance.....	301	133	209	47	62
Exports ²	731	25	228	42	122
Total disappearance.....	1, 032	158	437	89	184
1974-75					
Beginning carryover.....	126	9	66	28	18
Production.....	879	290	290	79	255
Total supply.....	1, 005	299	357	108	273
Domestic disappearance.....	304	137	159	38	45
Exports ²	518	144	130	49	198
Total disappearance.....	822	281	289	87	243
1975-76					
Beginning carryover.....	183	18	68	21	30
Production.....	1, 052	347	336	121	282
Total supply.....	1, 235	365	405	142	312

See footnotes at end of table, p. 136.

TABLE 1.—WHEAT: SUPPLY, DISTRIBUTION, AND PRICES, TOTAL AND BY CLASS JULY-JUNE AVERAGE 1965-69
AND ANNUAL 1972-75¹—Continued

	Hard winter (million bushels)	Red winter (million bushels)	Hard spring ⁷ (million bushels)	Durum ⁷ (million bushels)	White ⁷ (million bushels)
Domestic disappearance.....	274	164	169	40	60
Exports ²	735	175	160	60	220
Total disappearance.....	1,009	339	329	100	280
Carryover.....	226	26	76	42	32

¹ Data by class, except production, are approximations. Projected disappearance figures should be regarded as midpoint of estimated ranges.

² Imports and exports include flour and other products in terms of wheat.

³ Excludes grain in transit, the volume of which was abnormally large as of the survey date.

⁴ Used for food in the United States, U.S. territories, and by the military at home and abroad.

⁵ Residual; approximates feed use and includes negligible quantities used for distilled spirits and beer.

⁶ Does not include set-aside or disaster payments.

⁷ Total supply includes imports.

* Note: Totals may not add due to rounding.

OUTLOOK FOR RICE

[By James J. Naive, Commodity Economics Division, Economics Research Service, USDA]

The 1975/76 outlook for rice features a record U.S. and world rice crop and points to continued strong demand but some weakness in prices compared to the last 2 marketing years.

RICE CROP SETS NEW RECORD

As of November 1, the 1975 U.S. rice crop was estimated at a record 124 million cwt., 9 percent larger than last year's record outturn. With no quotas in effect and strong rice prices last spring, producers expanded acreage 7 percent to a record 2.8 million acres. Most of the expansion was in Arkansas, which now accounts for a third of the U.S. rice area. Since 1972, rice acreage in Arkansas has more than doubled. Mississippi, although not one of the "Big 4" rice States, has increased acreage threefold and now accounts for over 5 percent of the U.S. harvest.

Higher yields also contributed to the record harvest. However, this year's 4,517 pounds per acre is still well below the record 4,718 pounds set in 1971 when acreage was much smaller.

BEGINNING STOCKS DOWN BUT SUPPLIES RECORD LARGE

Stocks of rice on August 1 totaled 7 million cwt., fractionally below a year earlier. About 3 million cwt. of this total may have been export sales carried over from the 1974/75 marketing year. Consequently, available rice stocks were much smaller than data suggested.

With minimal carryover stocks, the 1975 rice crop is the dominate component of the 1975/76 supply, which is expected to reach a record of about 131 million cwt.

Production by class for 1975 is estimated at: long grain 68 million cwt., medium grain 47 million, and short grain 10 million.

The increase in this year's crop reflects larger long and medium grain harvests, while the short grain harvest appears to be down. Adding these production estimates to August stocks shows long grain accounting for 54 percent of the total supplies, medium grain 38 percent, and short grain 8 percent.

DOMESTIC USE MAY GAIN

In recent years domestic use of rice has grown on the average of about 2 percent a year. This rate of gain should at least be maintained in 1975/76. Food use may increase 4 or 5 percent from last year's 28

million cwt. because of both a larger population and some increase in per capita consumption.

In 1974/75 brewers' demand for rice appeared to be falling. However, in April, brewers' use picked up sharply and continued heavy for the remainder of the crop year. If the heavy consumption rate continues, brewers' use could approach 9 million cwt. in 1975/76, an increase of nearly 10 percent. Total domestic use for the year may range from 1 to 2 million cwt. above last year's record 40.2 million level.

ANOTHER STRONG EXPORT YEAR IN SIGHT

A steady expansion in world rice consumption, supplemented by large Middle East purchases, contributed to the record 1974/75 U.S. export year. Although demand in the Middle East will grow less than in 1974/75, overall world demand for rice will continue strong in 1975/76. The 1975 world rice crop is substantially larger, and already there is keener competition among exporters as well as lower prices.

Markets in recent years have certainly been anything but traditional. Booming markets in the Mideast, fueled by oil revenues, proved a boom for U.S. rice exports in 1974/75. While the dramatic 1974/75 growth in exports may be a one-shot phenomenon, the level of U.S. exports to this market area in 1975/76 are expected to at least maintain the year-earlier level of 15.5 million cwt. Last season the USSR purchased U.S. rice (0.3 million cwt.) for the first time in 12 years and there is a chance that purchases could be larger this year. Bangladesh, a large PL-480 market last season, will again have sizeable food aid requirements. Some of our traditional commercial markets reduced their imports or bought more heavily from other suppliers last season, so competitive prices will be a factor in deciding whether U.S. rice can recapture these markets.

About 3 million cwt. (rough basis) of expected export sales were carried over into 1975/76. This, coupled with expected demand, should result in U.S. rice exports in 1975/76 totaling near last season's 69.5 million cwt.

STOCKS TO BUILD

Even with prospects for a record large disappearance, carryover stocks in the summer of 1976 would increase. The extent of the buildup will hinge on the vigor of export demand. In any case, it appears year-ending stocks will at least double the 7 million cwt. of this summer.

RICE PRICES EASE

The 1975 national average loan rate for rice was set at 65 percent of the August 1975 parity or \$8.52 per cwt. Exports sales have lagged last year's pace and mill demand has been sluggish for the most part this season. Midmonth farm prices averaged \$9.80 per cwt. in August, \$8.88 in September and \$8.86 in October. Wholesale prices at mills have dropped about \$2 per cwt., since the season began. While growers have shown restraint in marketing rice, it seems unlikely that prices will strengthen as much as they did a year ago. Thus, the average price to farmers will fall short of last year's \$10.45 per cwt.

RICE QUOTAS AHEAD FOR THE 1976 RICE CROP?

Under current rice legislation, announcements on quotas and allotments for the 1976 crop must be made by December 31, 1975. Supply-demand conditions now in prospect for the 1975/76 marketing year suggest that marketing quotas and acreage allotments may be in effect for the 1976 rice crop. If so, rice production will be limited to producers who hold rice allotments. Of course, conditions can change, especially in overseas markets.

The determination of the need for marketing quotas under the legislation is triggered if "total supply" exceeds the "normal supply."

(1) Normal supply is 1974/75 domestic consumption (40.2 million cwt.) plus 1975/76 projected exports (66.4 to 72.6 million cwt.) plus 10 percent of the sum. Current estimates place normal supply at 117 to 124 million cwt.

(2) Total supply is the sum of the carryover as of August 1, 1975 (7.1 million cwt.) plus estimated 1975 production, (124.1 million cwt.) plus projected 1975/76 imports (0). The current estimate of total supply is 131 million cwt.

Since indicated "total supply" exceeds the estimate of normal supply, today's conditions would require that a determination be made to impose marketing quotas for the 1976 crop. The related allotment for the 1976 crop is the acreage that would produce enough rice (based on average yields for the past 5 years) when combined with the carryover stock would equal projected disappearance and carryover for the 1976/77 crop year.

WORLD RICE SITUATION

RECORD WORLD RICE CROP IN PROSPECTS

Thanks to a favorable monsoon season in Asia it appears that the world's 1975 rice crop will be around 4 percent larger than last year's record 328 million metric tons (rough). A good part of the expected increase shows up in South and East Asia, particularly India, Indonesia, and Bangladesh. Asia's rice consumption requirements increase at least 2.5 percent a year so that even with a large crop only a limited rebuilding of stocks is expected.

WORLD IMPORT DEMAND STRONG IN 1975; MAY WEAKEN IN 1976

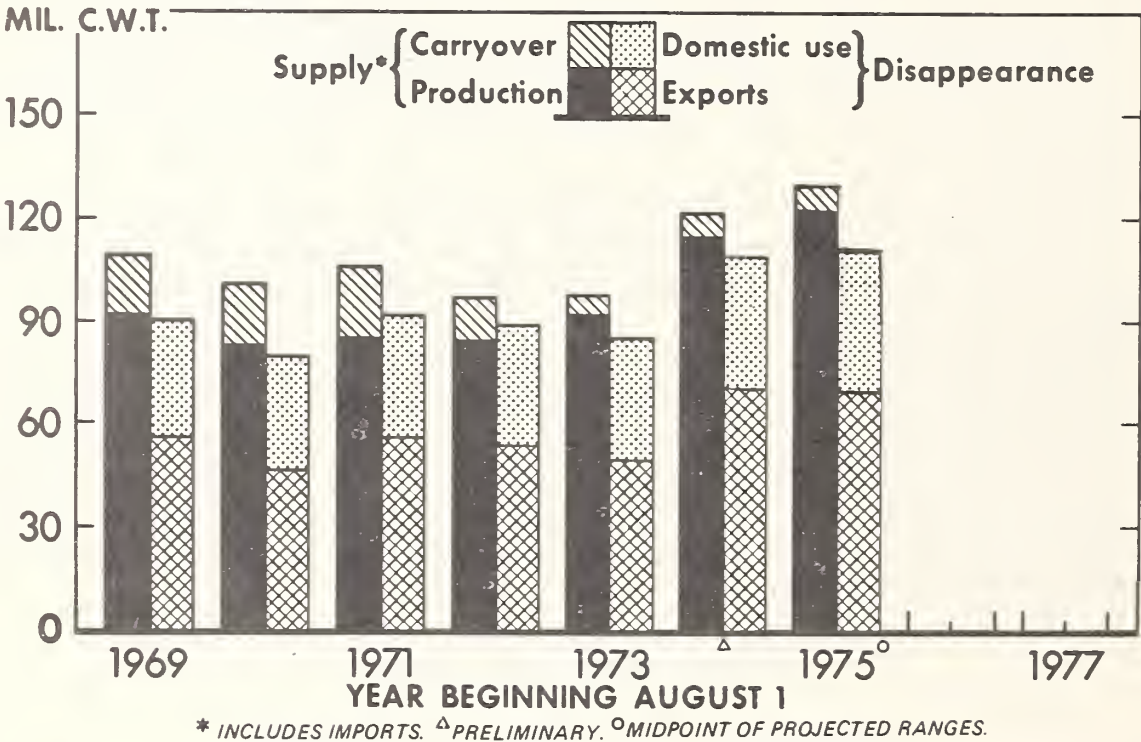
World imports of rice for calendar 1975 are estimated at 7.6 million metric tons (milled), up 3 percent from 1974. Imports are expected to be larger in Bangladesh, Hong Kong, Iran, Cambodia, South Korea, and Sri Lanka; down in Indonesia and South Vietnam; and about the same in the EC-9 and Philippines. The United States, Thailand, and the PRC are expected to account for about 70 percent of world exports.

With the 1975/76 crop larger in many countries, world import demand in 1976 may weaken some from recent high levels. However, lower price levels for rice as well as the recent convergence in wheat-rice prices may temper otherwise reduced imports. In addition, oil revenues continue to stimulate demand and imports in the Mideast.

WORLD RICE PRICES DECLINE

Thai rice prices, white 5 percent broken (f.o.b. Bangkok), fell 13 percent from early 1975 to August 1975, while U.S. long grain prices (f.o.b. Houston) during the same period decreased only around 5 percent. But U.S. rice prices have declined relative to Thai prices since the start of the U.S. harvest.

ROUGH RICE SUPPLY AND DISAPPEARANCE

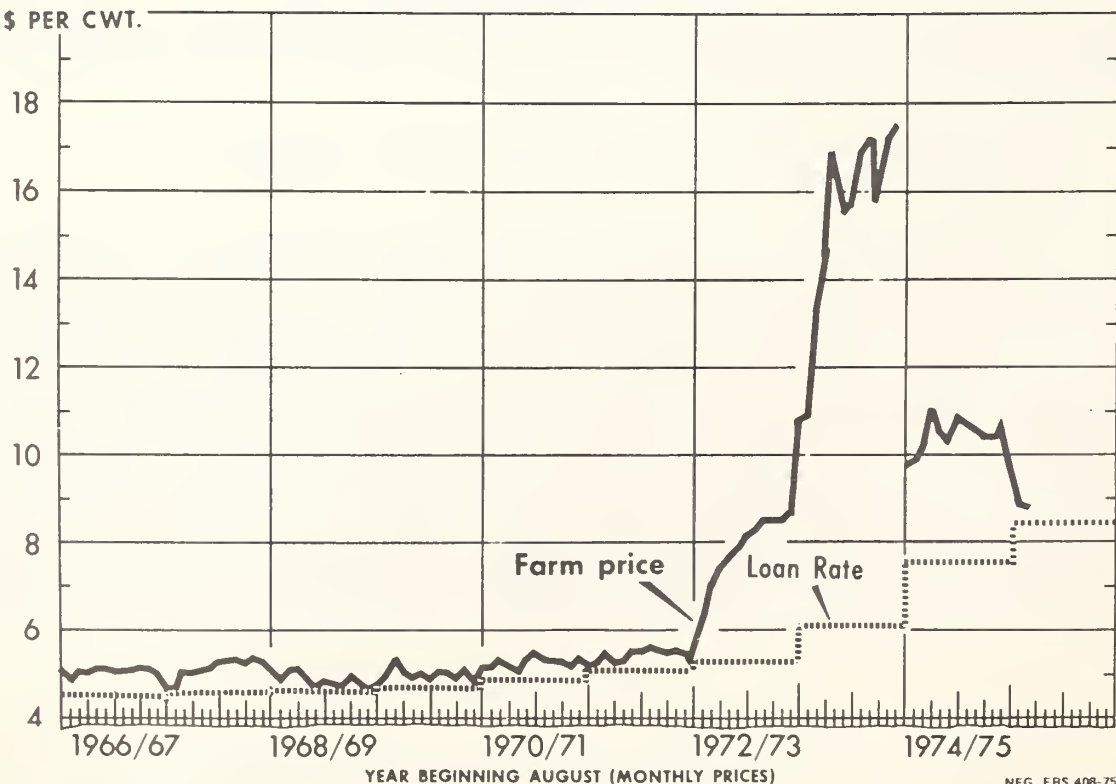


USDA

NEG. ERS 2119-75 (11)

ROUGH RICE

Farm Prices and Loan Rates



NEG. ERS 408-75 11

TABLE 1.—RICE, ROUGH EQUIVALENT: SUPPLY, DISTRIBUTION AND PRICES UNITED STATES, AVERAGE 1965-69, ANNUAL 1972-75¹

Item	Year beginning August				
	1965-69 average	1972	1973	1974 ²	1975 (projected)
MILLION HUNDREDWEIGHT					
Supply:					
Carryover Aug. 1.....	9.5	11.4	5.1	7.8	7.1
Production.....	89.3	85.4	92.8	114.1	124.1
Imports.....	.2	.5	.2	(³)	-----
Total supply.....	99.0	97.3	98.1	121.9	131.2
Domestic disappearance:					
Food ⁴	24.6	25.1	25.2	28.0	-----
Seed.....	2.8	3.0	3.6	3.8	-----
Used by brewers.....	5.6	7.6	8.2	8.4	-----
Total.....	33.0	35.7	37.0	40.2	41.4-42.2
Available for export and carryover.....	66.0	61.6	61.1	81.7	89.8-89.0
Exports.....	52.9	54.0	49.7	69.5	66.4-72.6
Total disappearance.....	85.9	89.7	86.7	109.7	107.8-114.8
Carryover July 31.....	11.3	5.1	7.8	7.1	23.4-16.4
Privately owned—Free.....	(8.5)	(5.0)	(7.8)	(7.1)	-----
Total distribution.....	97.2	94.8	94.5	116.8	131.2-131.2
Difference unaccounted ⁵	+1.8	+2.5	+3.6	+5.1	-----
DOLLARS PER HUNDREDWEIGHT					
Price support: National average loan rate.....	4.57	5.27	6.07	7.54	8.52
Price received by farmers season average.....	4.96	6.73	13.80	10.45	-----
Farm price above support.....	.39	1.46	7.73	2.91	-----

¹ Data apply to only major rice-producing States. Milled rice converted to rough basis at annual extraction rate.² Preliminary.³ Less than 50,000 cwt.⁴ Includes shipments to U.S. territories and rice for military food use at home and abroad.⁵ Results from loss, waste, the variation in conversion factors and incomplete data.

CANADIAN WHEAT SITUATION AND OUTLOOK

[By J. S. Carmichael, Marketing and Trade Division, Agriculture Canada]

Perhaps I may take the opportunity even if listed as a discussant to tell you a little about the Canadian wheat industry.

In Canada, the main growing areas for grain are the three prairie provinces of Manitoba, Saskatchewan, and Alberta. Saskatchewan is the major wheat province. This year Saskatchewan grew 61 percent of total Canadian wheat, Alberta 21 percent, Manitoba 12 percent, Ontario 4 percent (soft wheat) for 98 percent or more of the total for Canada. Alberta is the main province for barley with about 50 percent of the total, with Saskatchewan about 30 percent. In Manitoba crops are more diversified, some sunflowers, canning crops and sugar beets being grown in the red River Valley. Ontario grows the bulk of the soft winter wheat and 90 percent or more of the Canadian corn for grain. Quebec grows some corn and other feed grains.

The Maritime areas grow small amounts of grain, particularly Prince Edward Island, but generally speaking the Maritime Provinces, British Columbia and Quebec are importers of grain from the prairie provinces. There is not a great deal of scope for bringing more land in Canada into production, except on a marginal basis.

All but about 3 or 4 percent of our wheat is planted in the spring in western Canada. Average annual rainfall in this area is about 15 inches. The wheat produced in the prairie area is largely of the hard red spring varieties. A small area of durum is planted and in recent years a small area of dual purpose or so-called utility wheat is also planted.

In 1973-74 probably an average year, protein content of the hard red spring varieties of 13-13.5 was most common, followed by 13.5 to 14, then 12.5 to 13 and 14-14.5. Prairie wheats are largely either bread wheats, or durums for pastas. Ontario soft wheat is used for cake mixes, and other pastry type products.

The largest acreages sown to wheat in Canada occurred in the period 1964-68. For this period average acreage was more than 29 million acres with one year, 1967 having more than 30 million. For the last 6 or 7 years we have been in the 23-24 million acre range, just about one-third of the U.S. acreage harvested in 1975. The decline in wheat acreage in the last years has been accompanied by some expansion in the area planted to barley and rapeseed.

Our yields on two occasions have exceeded 27 bushels an acre but for the last 5 years or so the average has been about 25, well below United States averages. The reason, of course, is that the U.S. production has a high proportion of winter wheat varieties while Canadian production is almost all of the low yielding spring varieties.

In production our biggest year was 1966, the only year we produced as much as 800 million bushels. For the last five years we have had 3 years when production was a little more than 500 million bushels and two years including the current one just over 600 million bushels—about 28 percent of U.S. production.

On five occasions we have had annual exports exceeding 500 million bushels, in 1963–64, 1965–66, and 1966–67 when the U.S.S.R. had special requirements which were more or less repeated in 1971–72, and 1972–73. For the last two years exports have been around the 400 million bushel mark (less than 400 million in 1974–75) and in 1975 cannot greatly exceed 400 million bushels. This is roughly one-third of what you export.

In domestic consumption we use only about 65 million for human food, but with 32 million bushels or so for seed, and something over 70 million for annual feed, waste, and dockage, our domestic utilization runs to about 175 million bushels a year.

Stocks of Canadian wheat in the last 10 years or so have had 2 distinct phases. For a period of 4 years stocks increased sharply to 1970–71 when our stocks exceeded 1 billion bushels equal to nearly 2 years production. This particular year was marked by a program of government incentives to reduce plantings to keep our supply more in line with world requirements. There followed 5 years of reduced production and almost steadily falling stocks. Our carryover in the past couple of years has been just about at the minimum level required to service domestic and export markets from the end of our crop year (July 31) until the new crop reaches export position, usually late in October.

Perhaps it is appropriate to make comments on this specific crop year. All wheat production has been estimated by Statistics Canada in September at 607 million bushels on average yields of 25.9 bushels an acre. With carryover at 288 million, supplies amounted to 894 million bushels, about 35 million more than last year. The year 1974 had been a very difficult year, with little seeding until near the end of May due to wet weather, which was followed by very dry weather in the growing season and destructive early frost. This current season was a little better generally, but a little late, and with difficult harvesting conditions as a result of continuous wet weather especially across the southern part of the prairies and particularly in Manitoba. Only 56 percent of the spring wheat is in the top 2 grades compared with 38 percent last year and 75 percent on an average year. Durum is largely 3 CW or 4 CW. The protein content is lower this year than normal.

Out of the total of 607 million bushels, durum wheat amounted to 91 million bushels, about 60 percent more than last year and our biggest durum crop on record. In Ontario, the soft winter wheat crop amounted to 23 million bushels, considerably more than we require domestically.

Exports of wheat were off to a better start this year. To the end of October spring wheat exports at 112 million bushels (not including flour) were 34 million ahead of last year and exports of durum amounted to another 13 million bushels. Last year we were hampered by strikes early in the crop year. We have sold this year 3.9 million tonnes (145 million bushels) to the U.S.S.R. alone, including 37 million bushels of durum.

To some extent it is difficult to forecast what will happen next year in Canada in planting of one grain without consideration of factors covering all grains, and summerfallow. Any sizable increase in plantings next year will depend on whether some decrease can be accomplished in the 27-28 million acres held in summerfallow in the last few years. Farmers appear to feel there is need for sizable summerfallow acreage particularly in the drier southern prairies to conserve moisture and permit weed control.

Canadian farmers, like United States farmers, in considering next year's planting program look at prospective returns from alternative crops. We believe that for next year Canadian farmers will feel that there is a tendency for more potential strength in the wheat market than in the barley or rapeseed markets. We would expect to see a 10-12 percent increase in wheat plantings to perhaps 26 million acres in wheat with some balancing reduction in rapeseed, possibly a small reduction in summerfallow, and possibly even a small reduction in feed grains. If we grew 26 million acres we would have available for export 475-500 million bushels which seems a reasonable goal for the 1976-77 crop year.

Anyone who comments specifically on prospective prices these days is likely to lose his credibility pretty fast. There was an interesting comment recently in a newsletter of the German industrialist Alfred Toepfer which has implications for prices: "One should certainly not disregard the experience of recent years which has made it very clear that the purely statistical view of the supply-demand situation has lost much of its meaning; external factors, rumours and speculation, government intervention, and often contradictory utterances by those in authority are much more frequently swaying the market this way or that". In spite of the wisdom of the above statement, I would go as far as to suggest that unless currently unforeseen demand factors intrude, prices should recover somewhat from the current weakness and remain firm for the next few months with no significant change until information on the size of next year's world crops begins to emerge. At present we are really working on a one year at a time basis. If next year shapes up as a year when world stocks will build up, prices will be softer by summer, but there could be price increases if a world crop larger than this year's does not seem to be forthcoming.

It was reasonable to expect that improvements in world supplies could have occurred in either one of the last two years. This did not happen, of course, due to weather conditions. In the years to come we may very well have a more volatile situation in wheat than has been the case up until a few years ago. New production areas in some countries may tend to be marginal. Probably even though the productive capacity is available and the wheat and rice which can be produced is capable of feeding the world for many years to come, producing countries such as Canada and the United States will not want to amass the size of stocks of a few years ago. There would be continued uncertainty of world supplies, at least until a world reserve plan is in position.

It appears to me that Canadian wheat production has been running below desirable levels the last few years and that world demand warrants some increase in Canadian production for a few years at least.

Thank you again for your kind invitation to be present at your Outlook Conference.

OUTLOOK FOR FEED

[By James J. Naive, Commodity Economics Division, Economics Research Service, USDA]

FEED GRAINS

A record corn crop, and sharply larger crops of sorghum, oats, and barley than in 1974, are resulting in feed grain output 24 percent larger than last year. However, stocks at the beginning of 1975/76 were the smallest carry-in since 1948/49. The feed grain supply for 1975/76 is 16 percent more than in 1974/75 but otherwise the smallest since the 209-million-ton level of 1970/71. At the same time, the number of animals consuming grain also is the smallest in recent years. But in 1975/76 we see increases in domestic feeding, record large exports, and some recovery in carryover stocks.

Dry Weather Cuts Yields and Harvested Grain Acreage

The pronounced dry period during July and early August not only reduced potentially high yields, but also caused some corn producers to switch harvesting plans from grain to forage. Forecasts of harvested acreage have declined 370,000 acres since early July, mainly in the drought afflicted States of Iowa, Minnesota, South Dakota, and Missouri. On balance, however, total harvested acreage of feed grain is expected to be about 4% larger than last year's 101 million acres.

The dry weather in the Western Grain Belt also adversely affected yields even though weather in the Eastern States was nearly ideal. Yield prospects are off more than 5% from the 2.1 tons per acre forecasted in July.

As of November 1, the 1975 feed grain crop at 204 million short tons was 24% larger than last year's short crop. The sorghum and corn crops, which were hit hardest by 1974's weather blasts, have shown the greatest gains this year. Harvesting conditions have been exceptionally good this fall, running well ahead of normal. The rate of harvest has been so great that an unexpected glut has hit the early season market. The oats and barley crops are in and in early November 95 percent of the sorghum and 90 percent of the corn harvests were completed. Crop quality has been outstanding for the most part.

Smaller Carryover But Larger Supply

Beginning stocks at 16 million tons were down for the third consecutive year and the smallest since 1948/49.

With the larger feed grain crop and the smaller carryover stocks, the 1975/76 feed grain supply will be 220 million short tons, 17% larger than in 1974/75 but otherwise the smallest since 1970/71.

Producers Responded in 1974/75 to Unfavorable Feeding Conditions

Until a few months ago, prices of feeds were high in relation to livestock, poultry, and dairy prices. And there was an associated sharp drop in feeding operations. The number of cattle on feed was below year-earlier levels from the end of 1973 until October 1 this year. Farrowings began to decline in mid-1971 and continued at an accelerated rate when feed prices rose sharply, and now are apparently running around 7% below last fall. There were substantial cutbacks in egg, broiler, and turkey production, as well as dairymen reducing feed concentrates usage. The impact of these cutbacks caused feed use in 1974/75 to drop nearly a fourth to the lowest level in 10 years.

Largely as a result of these feeding cutbacks, feed grain prices during the course of 1974/75 declined about a third. But in July and August prices strengthened, largely reflecting concern and uncertainty over the size of 1975 crops in the Western Grain Belt and the very large grain purchases by the USSR.

Feeding Now Favorable

Reduced feeding and meat output is now being reflected in mostly strong livestock and poultry prices. Pork production for calendar year 1975, likely will be the smallest since 1966. Prices of barrows and gilts rose sharply in mid-June reaching an all-time high of around \$64 per cwt. and have since remained generally above \$50.

Broiler and turkey prices have followed the same course as hogs, rising more than usual in the late spring and early summer, partly because of supply adjustments but primarily because of high prices of pork, a competing meat.

Fed cattle prices strengthened in early May and Choice steers at Omaha have been \$44.50 or more since. In spite of the sharp reductions in cattle feeding, beef production has been at record highs in 1975 because of sharp increases in cow slaughter and slaughter of steers and heifers off ranges and pastures.

By early summer, livestock and poultry prices had risen enough to improve feeding margins, even with relatively high feed prices, to levels that generally have generated expansion of feeding operations in the past.

Broiler producers responded and July–September output ran a little above a year earlier and is expected to be a tenth higher in October–December. This trend should continue well into 1976.

Cattle feeders made small intermittent increases in placements during the summer, but the number on feed and fed cattle marketings were still well below 1974. In spite of record high hog prices, hog producers reduced farrowings about 14% this summer and farrowings in September–November are expected to be down 7% from a year ago.

Why didn't hog and cattle feeders respond to apparent favorable feeding conditions last summer? Part of the hesitancy to expand operations probably was due to their relatively long production periods and concern over 1975/76 feed and product prices. But part of the delayed response to favorable market conditions probably was due to the seasonal nature of cattle feeding and hog production. Placements of cattle on feed typically are largest in October–December, and increases in farrowings almost always begin in December–May.

Demand Indicators Point to a Substantial Increase in 1975/76 Feeding

Around September 1 hog producers indicated intentions to have 6% more sows farrow in December 1975–February 1976. These intentions were developed when price outlook during the summer was more uncertain so farrowings could turn out even higher.

Sow farrowings in March–May 1976 may be around a fifth larger than a year earlier. But pork production will continue below a year earlier through mid-1976, leading to prices of barrows and gilts sharply higher than a year earlier. This is likely to keep farrowings up sharply through most of 1976.

Cattle feeders have apparently overcome their earlier jitters—cattle on feed on October 1 (23 States) were 2% above last year's level. This was the first quarter that the number of cattle on feed was larger than a year earlier since October 1973. This turnaround apparently reflects extremely heavy placements in September since placements in the 7 major States were up 85%. Placements of cattle on feed are expected to continue to turn up sharply this fall and into 1976, which will lead to more cattle feeding.

Broiler production in October–December likely will be up 10% and it appears that it will continue at that rate in 1976. Turkey production in October–December will be about 6% larger than a year earlier, and should be up substantially in the first half of 1976.

Feeding rates are another factor to consider in usage. They are usually associated with slaughter weights. Slaughter weights were down for all classes of animals during 1974/75, but improved feeding conditions suggest that animals may be fed to heavier weights in 1975/76.

These demand indicators point to 1975/76 feed grain use for feeding ranging between 124–132 million short tons, which would be up about 8–15% from 1974/75. However, feed use will still be well below the high levels of 1972/73 and 1973/74.

Exports Likely To Be Record; Carryover Larger

Exports are expected to be a fifth to a third more than the 1974/75 level of 39 million tons. While much of this increase stems from the Soviet Union, it appears that feed demand may also be up in some major importing countries.

Given record exports and increased feeding, there would still be a moderate increase in carryover stocks to 21–24 million tons, compared with the 16 million tons at the end of 1974/75.

We look for feed grain prices to average somewhat lower in 1975/76 at these estimated levels of supply and disappearance.

WORLD SITUATION AND OUTLOOK

World Coarse Grain Output Larger but Disappointing After Early Expectations

The world 1975 coarse grain crop is no longer expected to reach a record, but at about 590 million metric tons will exceed last year's output by 3 percent. Production shortfalls in many of the major grain feeding countries—especially the USSR and Western Europe are forcing adjustments in the form of stock drawdowns, reduced feeding, or increased imports.

Canadian Output Rebounds

Canada's 1975 coarse grain harvest is estimated at 18 million tons, around 12 percent better than 1974's depressed crop. August and early September rains aided critically dry areas. Canadian feed use in 1975/76 is expected to increase 5 to 10 percent to about 13 million tons but like the U.S. situation, feeding will still be at a lower level than in the earlier 1970's.

Soviet Grain Crop Estimate Reduced to 160 Million Tons; Coarse Grains to 73 Million

On October 24 USDA reduced its estimate of 1975 USSR grain production to 160 million metric tons, reflecting a lower than previously estimated harvest in Kazakhstan—one of the main spring grain producing regions of the Soviet Union.

At 160 million tons, the Soviet grain crop would be about 35 million below that of 1974, and approximately 55 million below the original level planned for the 1975 crop.

The revised estimate of 160 million tons includes a wheat crop of 75 million tons and a coarse grain crop of 73 million tons. The miscellaneous grain estimate is 12 million tons.

The latest revisions suggest that there will be a significant downward adjustment of grain usage within the Soviet Union in 1975/76. Feed usage, in particular, may be cut by at least 5 percent from the 1974/75 level of 106 million tons.

Effects of the drought on Soviet livestock numbers began to appear in July and became more noticeable in August. The livestock feed base deteriorated and apparently to conserve available feed and grain supplies, higher-than-usual numbers of livestock were slaughtered, primarily hogs and poultry.

Total grain imports for the current July-June season are projected at about 27 million tons, while exports now seem likely to be no more than about 1 million tons. Imports of grain into the Soviet Union to offset this year's crop shortfall will probably continue into the early months of 1976/77 as was the case for 1972/73 and 1973/74. For the 15-month period, July 1975 through September 1976, it is likely that total USSR grain imports will be somewhat over 30 million metric tons.

Purchases of foreign grain by the USSR for shipment during July 1975 through September 1976, have reportedly already reached an estimated 25 million metric tons, including about 13 million from the United States.

Eastern Europe's Wheat and Coarse Grain Output Down 5 Percent

The region's wheat and coarse grain output for 1975 is estimated at 85 million tons, down 5 percent from 1974. The 1975 coarse grain crop is estimated at 55 million tons and the wheat crop at 30 million tons. The 4 million tons loss in this year's crop may be partially compensated for by a downtrend in hog and poultry inventories, better results from forage production, an expected average potato crop, improved feeding efficiency, and a shift from concentrate feeding to grazing. Mid-year livestock inventory reports point to a slowdown in the rate of increase and to declines in some categories for the region.

Western Europe's Coarse Grain Crop Down 3 Percent

Western Europe's coarse grain crop is estimated at 82 million tons for 1975, down 3 percent from 1974. The decline in production is mostly a result of poor weather—generally too much rain at planting time and drought later on in the season. Coarse grain production, while down in the EC, should be up by about 1 million tons in the non-EC countries due largely to a record barley harvest in Spain. The shortfall in the region's grain crop will be offset in part by large carryover stocks.

Coarse Grain Crops Projected To Be Down in South Africa and Australia but Larger in Argentina

South Africa's coarse grain crop that will be harvested next April is estimated at 10 million tons, down 5 percent from 1974/75. South Africa's coarse grain exports for 1975/76 are estimated at 4 million tons, about a tenth above last year's level.

The Argentine expected coarse grain harvest this winter and next spring is estimated at 16 million tons, up 26 percent from 1974/75. Argentine exports for 1975/76 are estimated at 6.4 million tons, down 25 percent from 1974/75, but this reflects the poor harvest last season.

Australia's coarse grain harvest which starts this coming December has been revised down to near last year's level of 4.7 million tons because of adverse weather.

1975/76 Trade Larger: U.S.S.R. Purchases Highlight the Scene

World coarse grain trade for 1975/1976 (July–June) is likely to be well above last year's 69 million tons and near the record 78 million tons in 1973/74. The major development on the import side is the increased USSR demand from 2.5 million tons for 1974/75 (July–June) to *13 million tons for 1975/76*. On the export side, shipments may be slightly larger for Canada, South Africa, Thailand, and Western Europe. U.S. shipments, which account for well over half of the world trade, are expected to be up substantially.

U.S.–U.S.S.R. Grain Agreement Reached

Agreement has been reached between the United States and the USSR on purchases of U.S. wheat and corn by the USSR for a 5-year period beginning October 1, 1976.

The agreement provides that the USSR will buy for shipment in each 12-month period beginning October 1, 1976, 6 million metric tons of wheat and corn, in approximately equal proportions, grown in the United States. Purchases will be at prevailing market prices with normal commercial terms.

The USSR may buy up to 2 million metric tons more in any 12-month period without consultation with the U.S. Government unless the USDA estimates the grain supply (carry-in stocks plus forward crop estimate for the coming crop year) below 225 million metric tons. When the U.S. grain supply falls below 225 million metric tons, the United States may reduce the quantity of wheat and corn available for purchase by the USSR.

The agreement calls for periodic consultations whenever the USSR wants to buy more grain or the United States wants to sell more grain than provided under the terms of the agreement.

CORN

Production Up 25 Percent and a Record

The Nation's 1975 corn crop estimated at 5.8 billion bushels on November 1 would be a fourth larger than last year's weather shortened crop.

With the October 1 carryover down to a low 359 million bushels, the corn supply for the 1975/76 marketing season will total around 6.2 billion bushels; 20% above 1974/75, but well below the peak 6.7 billion reached in 1972/73.

Domestic feed use of corn in 1975/76 is projected at 9 to 15% above the reduced feeding in 1974/75 but is short of feeding levels reached before last season's drop. In view of current strong feed costs, and uncertainties in livestock product prices, it would appear that greatest relative increases in 1975/76 feed consumption will come later in the marketing season.

Exports Appear Headed for Another Banner Year

U.S. corn exports for 1975/76 are projected at 1.4 to 1.5 billion bushels, well above the 1.15 billion bushels shipped in 1974/75. Deterioration of the Soviet grain crop and declining crop prospects in both West and Eastern Europe, will boost world grain trade in 1975/76.

Although not a U.S. customer of long standing, the USSR has become a steady purchaser of U.S. corn since 1971/72. USDA export sales reports confirm that the Soviet Union has already purchased approximately 300 million bushels of U.S. corn for shipment during 1975/76.

Export bookings to countries other than the USSR are lagging behind those at this time last year, probably because more importers are buying on more of a hand-to-mouth basis than in 1974-75. In contrast to 1974/75, U.S. supplies are larger and there appears to be concern of export controls.

Price Patterns

The 1974/75 price movements were extremely wide and were generally an atypical pattern as the domestic feeding industry made very sharp downward adjustments early in the season. This experience demonstrates that over the course of the season there is an upper limit to feed prices when costs and returns of domestic feeding are unfavorable.

Prices during this October-December should set the general level until next May and also may influence the seasonal pattern. If corn at the farm drops to around \$2.50 per bushel, there is a good chance of some runup as the marketing year progresses. But if prices should suddenly shoot up, some livestock producers may have second thoughts about buying and feeding corn. Consequently, prices would begin to drop early in 1976, especially if spring weather is normal for planting 1976 crops.

Although the corn marketing year begins in October, the heavy harvest period, one might consider that the price year begins in May, the start of planting, so long as production remains at 90 per-

cent or more of the supply. Good weather next spring would contribute to a steadier market, while adverse weather could induce market nervousness.

SORGHUM

Supplies Tight; Prices Strong Relative to Corn

This year's sorghum crop is forecast at 770 million bushels, 23% more than last year's drought-shortened harvest.

Although production will be large, total supplies continue below a billion bushels, because of "rock bottom" carryover stocks. In 1975/76 it appears that the entire sorghum crop will be used, making sorghum supplies the "tightest" again of all the feed grains.

Domestic feeding of sorghum is projected at 10 to 20% above the low volume consumed in 1974/75. Increased placements, stronger cattle prices, relatively more sorghum available in the Plains States, and continued low wheat feeding would support increased sorghum feeding in 1975/76. However, if export demand continues strong and sorghum prices are high relative to corn prices, more corn may be fed in States producing sorghum than normal.

Sorghum exports are projected between 250 and 300 million bushels, well above the 212 million bushels shipped in 1974/75. Stronger demand by the European Community, Eastern Europe, and India will account for most of the increase.

Sorghum prices are beginning to edge a little above their usual relationship of 88 to 92 percent of corn. Kansas City sorghum in early November was quoted at \$4.40 per cwt., off about 75 cents from mid-August and about \$1.93 from a year ago. With the peak of crop combining past, sorghum prices may begin to inch up seasonally. Sorghum prices are largely influenced by corn and to some extent by hard red winter wheat prices. Winter wheat seedings in the southern Plains States were delayed because of dry weather.

OATS

The 1975 oat crop is forecast at 678 million bushels, 9 percent more than the 1974 crop of 621 million bushels. The larger crop was due both to a larger number of acres harvested, 13.9 million compared with 13.3 million even though planted acreage was smaller in 1975, and to better yields. Yield of oats per harvested acre averaged 48.6 bushels in 1975, 2 bushels more than in 1974.

Because carryover stocks on July 1 were down to 185 million bushels, lowest since 1948/49, the increase in the oat harvest was not fully offsetting. The oat supply for 1975/76 is 863 million bushels, compared with 876 million bushels in 1974/75.

However, oat usage likely will be about the same to larger in 1975/76, so carryover stocks are expected to be even smaller at the end of the marketing year. Domestic use likely will range between 665-725 million bushels, compared with 680 million in 1974/75; exports are likely to be 20-30 million bushels, up from 11 million.

In July-September, the first quarter of 1975/76, total disappearance of oats was 221 million bushels, virtually the same as a year earlier.

Oat prices at the farm averaged \$1.50 per bushel in 1974/75. In 1975/76, prices may average \$1.30–\$1.60. Prices at the farm averaged \$1.45 per bushel in July, \$1.44 in August, \$1.45 in September, and \$1.41 in October.

BARLEY

The 1975 barley crop is estimated at 381 million bushels, nearly a fourth larger than the 1974 crop. But because carryover stocks at the beginning of 1975/76 were down to only 76 million bushels from the relatively low level of 119 million the year before, the 1975/76 barley supply is 477 million bushels, compared with 447 million in 1974/75.

Utilization of barley is likely to range between 390–410 million bushels in 1975/76, compared with 371 million bushels in 1974/75. Domestic feeding likely will take 170–210 million bushels, up from 175 million. Barley used for food, seed, industry may be around 160 million bushels up slightly from 156 million. Exports may total 40–60 million bushels, compared with 40 million in 1974/75.

In July–September, barley disappearance was 112 million bushels, a little less than the 124 million bushels used in the first quarter of 1974/75.

Prices received by farmers for barley averaged \$2.35 per bushel in July, about the same as a year earlier, \$2.56 in August, 22 cents below a year earlier, \$2.69 in September, down 17 cents, and \$2.68 in October, down 43 cents.

Prices of No. 3 or better feed barley at Minneapolis averaged \$2.77 per bushel in August, 8 cents more than a year earlier, \$3 in September, up 52 cents, and \$2.83 in October, down 24 cents.

HIGH-PROTEIN FEED

Demand Picks Up

With prospects of better livestock and poultry feeding margins, demand for protein likely will improve in 1975/76. Domestic use of protein feed (soybean meal basis excluding nonprotein nitrogen) in 1975/76 is forecast at around 6 percent above the 18.6 million tons in 1974/75, but slightly below the heavy usage of most other recent years. Availabilities of different proteins will vary as usual, but the supply of soybean meal will be more than adequate.

Soybean meal (SBM) domestic use is projected at 13.8 million tons, 1.3 million more than last season. The abundant supply of beans provided an ample supply of raw material for domestic crushers. More demand for meal through heavier feeding rates is forthcoming because of improved livestock and most poultry feeding margins. But recovery of levels of recent years is not expected because of diminished livestock numbers.

In 1975/76, SBM probably will continue to be priced favorable relative to grain as feed grains continue to be in fairly tight supply. Consequently, some meal demand will be generated because of price relationships that favor maximum use of protein in feed rations. Last year soybean meal at Decatur averaged 1.2 times the price of Chicago corn on a pound for pound basis compared to a traditional average of about 1.6. While SBM use was off in 1974/75, the decline was substantially less than corn. Meal may continue to be competitively priced with

urea, although urea prices may soften in 1975/76 because of prospects for increased supplies.

SBM (44 percent Decatur) averaged \$131 per ton in 1974/75. Daily prices fluctuated between \$188 in October 1974 and \$102 in March 1975. In 1975/76, the price level may average a little below last year because of prospects for lower bean prices. However, oil has run into considerable competition from other fats and oils here and abroad, and presently is priced well below 1974/75. Lower priced oil means that a larger proportion of the processors' margin will come from soybean meal sales. Daily prices of meal may not fluctuate as widely as the \$86 range in 1974/75 because larger supplies of beans (and grains) will have a steadying influence. However, prices likely will continue to fluctuate more than old "norms" because of continued tight supplies of feed grains and uncertainties in U.S. crops and demand abroad in 1976.

If feed grain prices drift downward from present fall levels during the course of the marketing year, meal prices could ease, but should grain prices advance, a rise in meal prices could follow.

Cottonseed meal (CSM) prospects for a 22 percent smaller 1975 cotton crop mean a similar downturn in new crop cottonseed available for oil mills. Stocks of old crop seed on August 1 totaled 554,000 tons, 16 percent above a year earlier. However, because of the much smaller 1975 cotton crop, there will be 19 percent fewer supplies of cottonseed available during 1975/76. Assuming 88 percent of the supplies are crushed, output of cottonseed meal available for cattle feeding in 1975/76 would be down 15 percent to around 1.6 million tons. In view of the large cattle herd, cattlemen (especially those in the South and West) will have to either lower their use of CSM or seek other protein sources that are in more ample supply, such as SBM and peanut meal.

CSM prices in 1975/76 probably will stay high relative to soybean meal. Typically, CSM is priced about \$12-\$16 below soy meal, but in recent months it has been running within \$5 of soybean meal.

Fishmeal (FM) supplies for all of 1975/76 will have to face the uncertainties of the domestic fish catch in the summer of 1976. Domestic production of FM during May-September 1975 (the height of the U.S. fishmeal season) totaled 243,000 tons, 10 percent less than last year. Imports of 59,000 tons were up 77 percent and reflect stepped up demand by the U.S. broiler industry. Supplies for 1975/76 are projected to reach 500,000 tons if domestic production next summer returns to pre-1975 levels and imports increase because of improved feeding conditions for broilers.

East coast fishmeal in 1974/75 averaged \$250 per ton, substantially below the high marks in 1972/73 and 1973/74. The decline in FM prices during 1974/75 was largely the result of waning feed demand.

HAY AND FORAGE

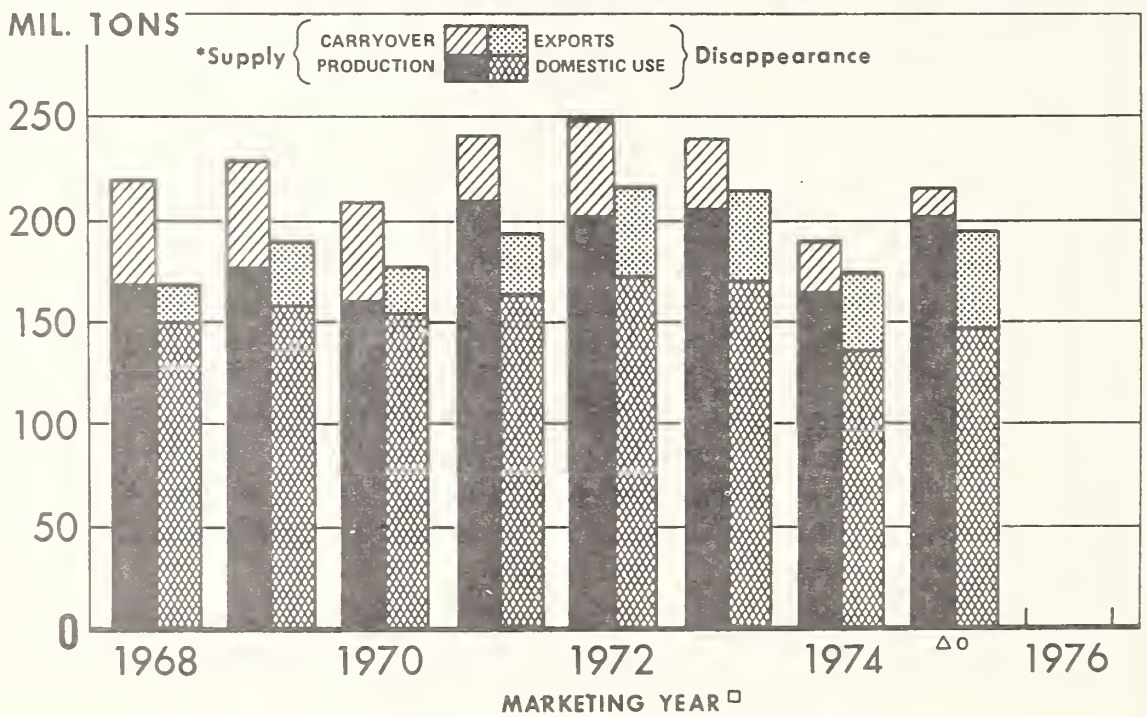
Hay production in 1975 totaled 130 million tons, 2% above last year's crop but 3% below 1973. Both acreage harvested and yield per acre are up this year from 1974 levels. However, due to the low carry-over on May 1, the 1975/76 hay supply at 149 million tons is 2% less than last season's and the smallest since 1967/68.

The largest increases in hay production this year were in North Dakota, Oklahoma, and South Dakota while Idaho, New York, and Texas have the largest decreases in production. Most of the decrease in Texas was due to lower acreage, while output changes in the other States were mainly due to yields.

Starting with a record high in May, hay prices have remained strong this season with monthly farm prices for all hay (baled) staying above \$50 per ton. By October the price was \$50 compared to \$52 a year earlier and \$46 in October 1973. Since July, the average price for alfalfa hay at the farm has been between \$54 and \$55.

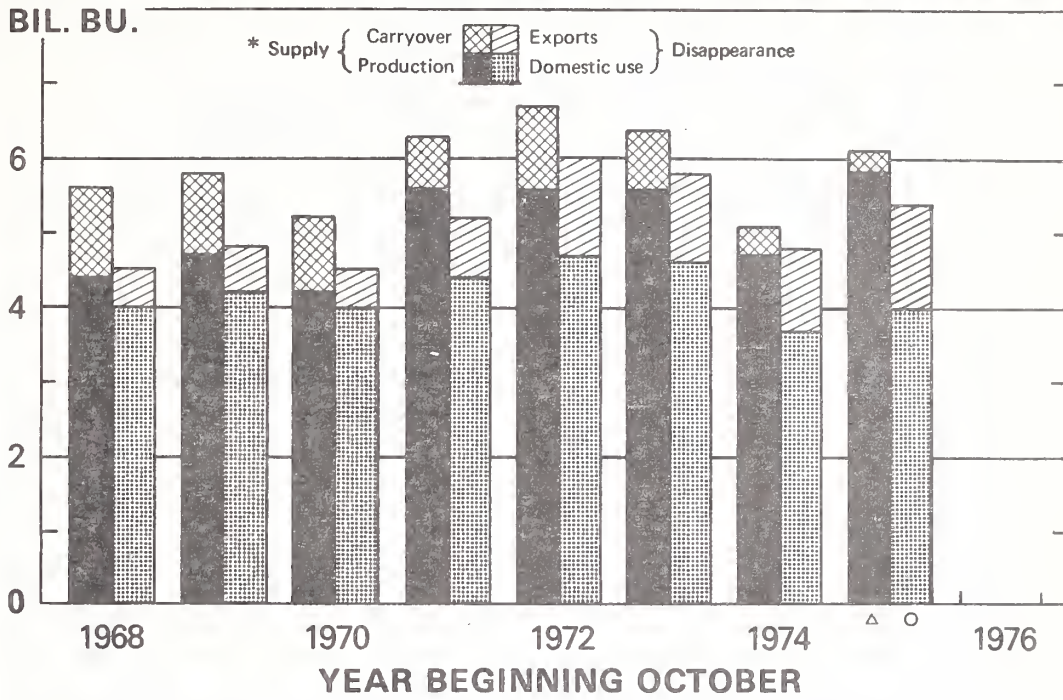
Pasture and range feed conditions this year have generally been above a year ago and average. However, below normal wheat pasture grazing conditions in most Plains States this fall increased the need for supplemental feeding. The record inventory of cattle outside feedlots and smaller hay supply combined with strong feed grain prices will probably keep hay prices in 1975/76 close to the high price level experienced last season. The number of milk cows on farms is expected to decline only slightly for the remainder of 1975, which should help maintain the strong demand for high quality hay. On the other hand, if profit margins encourage placement of cattle into feedlots, reduced emphasis on forage feeding would tend to temper hay demand.

FEED GRAIN SUPPLY AND DISAPPEARANCE



□ BEGINNING OCTOBER 1 FOR CORN AND GRAIN SORGHUM; JULY 1 FOR OATS AND BARLEY
 △ FORECAST ◯ MID-POINT OF PROJECTED RANGES *INCLUDES MINOR VOLUME OF IMPORTS

CORN SUPPLY AND DISAPPEARANCE



* INCLUDES SMALL VOLUME OF IMPORTS.

△ FORECAST.

○ MIDPOINT OF PROJECTED RANGES.

USDA

NEG. ERS 384-75 (10)

TABLE 1.—FEED GRAINS: MARKETING YEAR SUPPLY, DISAPPEARANCE, ACREAGE, AND PRICES, 1969-75¹

Year ²	Supply			Disappearance			Ending stocks						
	Beginning stocks	Production	Imports	Total	Domestic use			Exports	Total dis- appearance	Privately held	Govern- ment ³	Total	
					Feed	Food, industry, and seed	Total						
Million short tons:													
1969-70	50.2	177.4	0.4	228.0	141.8	16.4	158.2	21.2	179.4	20.8	27.8	48.6	
1970-71	48.6	160.1	.4	209.1	138.9	16.3	155.2	20.7	175.9	14.2	19.0	33.2	
1971-72	33.2	207.7	.5	241.4	149.0	16.7	165.7	27.3	193.0	17.9	30.5	48.4	
1972-73	48.4	199.9	.4	248.7	156.2	17.0	173.2	43.1	216.3	21.7	10.7	32.4	
1973-74	32.4	205.0	.2	237.6	153.3	17.7	171.0	44.4	215.4	20.3	1.9	22.2	
1974-75 ⁴	22.2	165.1	.5	187.8	114.7	18.1	132.8	39.2	172.0	14.9	.9	15.8	
1975-76 ⁵	15.8	204.1	.5	220.4	124.0-	18.5	142.5-	52.3-	194.8-	-----	-----	25.6-	
					132.6		151.1	47.5	198.6			21.8	
Year ²	Acreage (million acres)			Yield per harvested acre (short tons)			Seasonal index, price received by farmers, ⁶ (1967=100)			Govt. price-support operations, total payments to program participants (millions)			
	Base or allotment	Set-aside		Planted	Harvested for grain								
1969-70	133.0	39.1		115.3	95.5		1.86			97		\$1,644.5	
1970-71	133.0	37.4		118.8	99.3		1.61			110		1,509.7	
1971-72	132.9	18.2		128.0	106.3		1.95			96		1,060.1	
1972-73	129.8	36.6		115.1	94.0		2.13			141		1,865.3	
1973-74	130.0	9.4		121.4	102.4		2.00			222		1,170.8	
1974-75 ⁴	89.0	-----		122.6	100.7		1.64			250		327.8	
1975-76 ⁵	89.0	-----		122.9	103.9		1.95			7 228			

¹ Aggregated data on corn, sorghum, oats, and barley.² The marketing year for corn and sorghum begins Oct. 1; July 1 for oats and barley.³ Under loan to or owned by CCC; for years prior to 1973 CCC's inventory does not include quantities committed for sale.⁴ Preliminary.⁵ Forecast; based on November 1975 indication⁶.⁶ Excludes support payment.⁷ October 1975.

TABLE 2.—CORN: MARKETING YEAR SUPPLY, DISAPPEARANCE, ACREAGE AND PRICES, 1969-75
[Million bushels]

Year beginning Oct. 1	Supply			Disappearance			Ending stocks Sept. 30		
	Beginning stocks	Production	Imports	Domestic use		Total	Exports	disappearance	Total
				Feed	Food, industry and seed				
1969-70	1,118	4,687	1	3,796	393	4,189	612	4,801	1,005
1970-71	1,005	4,152	4	3,581	396	3,977	517	4,494	667
1971-72	667	5,641	1	3,978	409	4,387	796	5,183	1,126
1972-73	1,126	5,573	1	4,310	423	4,733	1,258	5,991	709
1973-74	709	5,647	1	4,193	438	4,631	1,243	5,874	483
1974-75 ²	483	4,651	2	3,178	450	3,628	1,149	4,777	359
1975-76 ³	359	5,804	1	3,475-3,675	465	3,940-4,140	1,500-1,400	5,440-5,540	724-624

Year beginning Oct. 1	Acreage (million acres)			Seasonal prices (dollars per bushel)				Government price-support operations		
	Base or allotment	Set-aside	Planted	Harvested for grain	Yield—per acre harvested (bushels)	Received by farmers ⁴	No. 2 yellow		National average loan rate (dollars per bushel)	Support payment (dollars per bushel ⁵)
							Chicago	Omaha		
1969-70	90.3	27.2	64.3	54.6	85.9	1.16	1.31	1.24	1.05	.13
1970-71	90.3	26.1	66.8	57.4	72.4	1.33	1.47	1.39	1.05	.14
1971-72	90.2	14.1	74.1	64.0	88.1	1.08	1.23	1.23	1.05	.16
1972-73	88.1	24.4	67.0	57.4	97.1	1.57	1.91	1.80	1.05	0
1973-74	88.7	6.0	71.9	61.9	91.2	2.55	2.95	2.79	1.05	0
1974-75 ²	(⁶)	0	77.7	65.2	71.3	2.95	3.12	3.05	1.10	0
1975-76 ³	(⁶)	0	77.7	66.6	87.2	7 2.62	7 2.74	7 2.75	1.10	0

¹ Under loan to or owned by CCC; for years prior to 1973 CCC's inventory does not include quantities committed for sale.

² Preliminary.

³ Forecast; based on November 1975 indications.

⁴ Excludes support payment.

⁵ Average earned on total corn produced.

⁶ Available for total feed grains only.

⁷ October 1975.

TABLE 4.—OATS: MARKETING YEAR SUPPLY, DISAPPEARANCE, ACREAGE AND PRICES, 1969-75
[Million bushels]

Year beginning July 1	Supply			Disappearance			Ending stocks June 30					
	Beginning stocks	Production	Imports	Total	Feed	Domestic use		Privately held	Government ¹	Total		
						Total	Exports disappearance					
Seasonal prices (dollars per bushel)												
Year beginning July 1	Acreage (million acres)			Government price-support operations					Total pay- ments to participants ⁵ (million dollars)			
	Base or allotment ⁵	Set-aside ³	Planted	Harvested for grain	Yield— per harvested acre (bushels)	Government price-support operations						
						Received by farmers ⁶	Minneapolis— No. 2 white, extra heavy	Portland— No. 2 white, extra heavy		Chicago— No. 2 white, heavy	National average loan rate (dollars per bushel)	Support payment ⁵ (dollars per bushel)
1969-70	379	966	2	1,347	736	107	843	5	848	203	296	499
1970-71	499	917	2	1,418	781	102	883	18	901	158	359	517
1971-72	517	881	4	1,402	738	99	837	24	861	169	372	541
1972-73	541	692	3	1,236	711	93	804	22	826	189	221	410
1973-74	410	667	(²)	1,077	666	98	764	58	822	158	97	255
1974-75 ³	255	621	(²)	876	587	93	680	11	691	129	56	185
1975-76 ⁴	185	678	(²)	863	570-630	95	665-725	30-20	695-745	-----	-----	168-118
Seasonal prices (dollars per bushel)											Government price-support operations	
Year beginning July 1	Base or allotment ⁵	Set-aside ³	Planted	Harvested for grain	Yield— per harvested acre (bushels)	Received by farmers ⁶	Minneapolis— No. 2 white, extra heavy	Portland— No. 2 white, extra heavy	Chicago— No. 2 white, heavy	National average loan rate (dollars per bushel)	Support payment ⁵ (dollars per bushel)	Total pay- ments to participants ⁵ (million dollars)
1969-70	-----	-----	23.6	18.0	53.7	.58	.64	.74	.64	.63	-----	-----
1970-71	-----	-----	24.5	18.6	49.2	.62	.69	.80	.73	.63	-----	-----
1971-72	-----	-----	22.0	15.8	55.9	.60	.66	.84	.90	.54	-----	-----
1972-73	-----	-----	20.2	13.5	51.2	.72	.82	1.04	1.44	.54	-----	-----
1973-74	-----	-----	19.1	14.1	47.4	1.18	1.34	1.61	1.75	.54	-----	-----
1974-75 ³	-----	-----	18.1	13.3	46.6	1.50	1.69	1.89	1.37	.54	-----	-----
1975-76 ⁴	-----	-----	17.4	13.9	48.6	1.44	1.59	1.94	1.37	.54	-----	-----

¹ Under loan to or owned by CCC; for years prior to 1973 CCC's inventory does not include quantities committed for sale.

² Less than 500,000 bushels.

³ Preliminary.

⁴ Forecast; based on November 1975 indications.

⁵ Not included in the program.

⁶ Excludes support payment.

⁷ July-October average 1975.

TABLE 5.—BARLEY: MARKETING YEAR SUPPLY, DISAPPEARANCE, ACREAGE AND PRICES, 1969-75
[In million bushels]

Year beginning July 1	Supply			Disappearance			Ending stocks June 30	
	Beginning stocks	Production	Imports	Domestic use		Total disappear- ance	Privately held	Government ¹
				Feed	Food, industry and seed			
1969-70	201	427	13	247	141	388	120	116
1970-71	236	416	9	289	139	428	65	90
1971-72	155	464	15	266	142	408	96	79
1972-73	175	423	14	238	145	383	113	50
1973-74	163	422	9	237	150	387	115	4
1974-75 ²	119	308	20	175	156	331	76	0
1975-76 ³	76	381	20	170-210	160	330-370	390-410	87-67

Year beginning July 1	Acreage (million acres)			Seasonal prices (dollars per bushel)			Government price-support operations		
	Base or allotment	Set-aside	Planted	Yield—per harvested acre (bushels)	Received by farmers ⁴	Fresno— No. 2 western feed	National average loan rate (dollars per bushel)	Support payment (dollars per bushel)	Total payments to participants (million dollars)
1969-70	18.0	4.4	10.3	44.7	.88	1.29	.83	.06	46.0
1970-71	18.0	3.9	10.5	42.8	.97	1.43	.83	.06	44.7
1971-72	18.0	0	11.1	45.7	.99	1.50	.86	0	0
1972-73	18.0	4.9	10.6	43.6	1.21	1.72	.86	0	107.2
1973-74	17.3	1.4	11.2	40.3	2.13	2.74	.86	0	77.7
1974-75 ²	(7)	0	9.1	37.2	2.72	3.14	.90	0	15.4
1975-76 ³	(7)	0	9.6	44.1	2.57	2.86	.90	0	0

¹ Under loan to or owned by CCC; for years prior to 1973 CCC's inventory does not include quantities committed for sale; in 1975 the inventory was less than 500,000 bushels.

² Preliminary.

³ Forecast: Based on November 1975 indications.

⁴ Excludes support payment.

⁵ 60 percent to 70 percent plump or better.

⁶ Average earned on total barley produced.

⁷ Available for total feed grains only.

⁸ July-October average, 1975.

REVIEW OF U.S. ANIMAL FEED GRAIN USAGE FOR 1975/76

[By Maurice P. Brannan, Cargill, Inc.]

INTRODUCTION

Issues affecting agriculture in general and the grain industry in particular have been making headlines recently. The discussion and policy stemming from these issues have affected all involved—from the grain and livestock producers to the processor, in addition to the consumer. Any listing made of these concerns would find the most recent and well known to be problems imposed by the purchases of centrally-planned economies. The decision made by Russia to import grain in 1972 to maintain their livestock inventories has manifested structural changes in the U.S. livestock feeding sector since then. World grain crop prospects and import demand have a direct impact on the level of domestic feed prices. The low level of world grain stocks continues to make grain prices volatile and to keep the world dependent upon current harvests for meeting food needs. Many grain-livestock producers have decided it is better to take their profits on the grain market rather than run the risks and uncertainties of feeding animals.

A weak feed demand base faces one when analyzing prospects for 1975/76 because of the drought-reduced harvests of feed grains in 1974. Feeders were quick to adjust to the high feed prices last fall. A look at 1975/76 feed grain feed use prospects and associated problems encountered in an analysis of this type is warranted.

ANIMAL FEED GRAIN REQUIREMENTS FOR 1975/76

Overall, a small increase in 1975/76 animal feed grain usage over 1974/75 is expected because of a combination of factors:

(a) The large cutback in last half 1974/75 sow farrowing equates to less pigs for the early part of the 1975/76 feeding year. Even though hog production has been quite profitable in recent months and the outlook is favorable, it is ten months from the time a sow or gilt is bred until a 220 pound marketable pig. In addition, it is six months from conception before the offspring start consuming significant amounts of feed grains.

(b) More cattle will be fattened on grain than 1974/75 due to better feeding economics. The trend by feedlot operators of placing heavier feeder cattle should continue with the large feeder cattle inventory. But a dramatic change in grain feeding rates per head over 1974/75 with larger feed grain supplies and lower price levels is not expected,

because it appears the trend is toward producing fed cattle that basically grade high-good instead of low-choice; thus, less days required on feed. Many chain grocery stores have gone the route of merchandising their own store-grade beef, and they are buyers of this shorter fed beef. Also, futures prices in early November for corn and fed cattle suggest that there may not be enough profit incentive to get an abrupt turnaround in cattle feeding, especially by the Corn Belt farmer—feeder who normally only feeds once a year.

(c) Moderate increases in broiler and turkey inventories are anticipated with improved feeding margins.

SELECTED ANIMAL INVENTORY CHANGES FOR 1975-76 VERSUS 1974-75

(October–September Feeding Year)

<i>Class</i>	<i>Percent change</i>
Fed cattle marketed-----	+4 to +7
Milk cows-----	–1.8
Hogs-raised -----	–3 to –4
Broilers-raised -----	+8.5
Turkeys-raised -----	+2.0
Layers -----	–3.0

Therefore, domestic feed use is not anticipated to increase significantly until the last half of the October–September feeding year. Domestic animal feed grain usage in 1975/76 is projected to total 122.8 to 126.4 million short tons, compared with 117.0 million short tons estimated for 1974/75, a 5 to 8 percent increase. Corn usage is estimated at 3.35 to 3.45 billion bushels for 1975/76. The big swing factors in feed usage are the fed cattle sector and hogs.

DOMESTIC FEED GRAIN ANALYSIS

It does not take one very long to determine that the domestic feed grain analysis is very subjective. The accuracy of the USDA or private estimates is always up for debate due to a wide array of factors. Before discussing the factors, it should be emphasized the USDA feed usage is really a feed and residual number. In addition, the amount fed is not a true accounting because of the crop year procedure which does not reflect new-crop grain fed prior to the beginning of the associated crop year.

When calculating the feed usage, the most important factor is the animal inventory estimate. A weak link in the animal inventory is the infrequency of USDA hog surveys compared to cattle on feed and poultry reports. An abbreviated monthly “Hogs and Pigs Report” similar to the “Seven State Cattle on Feed Report” would be quite helpful for grain and livestock analyses. Hogs consume 25 to 30 percent of the feed grains in the U.S. while broilers only consume approximately 5 to 7 percent of the feed grains. Another subjective factor is the feeding rate per animal class, and it is strictly an educated guess for the ruminant sector because of the interdependancy of grain and roughages. Other key factors used in the analysis are feeder cattle placement and slaughter weights, quality of the feed grain crop (test weight and moisture levels), feed grain-high protein ingredient price relationships, price outlook for animals and grains and consumer demand for meat.

Structural changes in agriculture the past three years have also made the feed use analysis more difficult. Foreign markets for our grains and oilseeds have improved the prosperity of the American farmer. He is now more keenly aware of the market outlets for his grain. Thus, some grain-livestock farmers have de-emphasized livestock and have gone to selling more cash grain, contrary to what historical trends have led us to believe. Currently, the hog industry is going through a transition to larger, more specialized operations, much like what has already occurred in the cattle feeding and broiler industries.

Personally, I do not believe some of the Corn Belt hog farmers will ever return to hog production. Their vacant facilities/excess capacity serve as a deterrent to others thinking about expanding into specialized hog production. It will take an extended period of good profits to test this hypothesis. If true, substantial new capital will be invested in larger and more specialized facilities.

SUMMARY

While only the surface has been scratched in reviewing the domestic feed grain usage by animals, it is felt the USDA could improve its periodic reports on this subject.

More frequent USDA reports on "Hogs and Pigs" would be beneficial not only to the government but private users of the information. A more accurate evaluation of feed grain usage by hogs could be calculated which benefits the grain farmer, livestock and poultry producers, meat packers, grain merchandisers and consumers.

Even though analysis of the feed grain usage by animals is subjective, it is felt the USDA should publish quarterly usage projections for the four feed grains along with its annual usage projections. The quarterly breakdown would be useful for animal and livestock producers in evaluating feed grain price outlooks.

U.S. CASH RECEIPTS FROM FARM MARKETINGS, 1969-74

Year	Livestock and products (billions)	Crops (billions)	Total ¹ (billions)	Distribution (percent)	
				Livestock and products	Crops
1969.....	\$28.6	\$19.5	\$48.1	59.5	40.5
1970.....	29.6	20.9	50.5	58.6	41.4
1971.....	30.6	22.3	52.9	57.8	42.2
1972.....	35.7	25.3	61.0	58.5	41.5
1973.....	46.2	42.3	88.5	52.2	47.8
1974 preliminary.....	42.3	52.7	95.0	44.5	55.5

¹ Excludes Government payments.

U.S. AGRICULTURAL EXPORTS, FISCAL YEARS 1970-76

Fiscal year beginning July 1	Grains and oilseeds ¹ (billions)	Total agricultural exports (billions)	Grains and oilseeds as percent of total
1969 to 1970.....	\$4.0	\$6.7	59.7
1970 to 1971.....	4.8	7.8	61.5
1971 to 1972.....	4.8	8.0	60.0
1972 to 1973.....	8.8	12.9	68.2
1973 to 1974.....	15.6	21.3	73.2
1974 to 1975.....	15.8	21.6	73.1
1975 to 1976 projection.....	16.4	22.0	74.5

¹ Grains and preparation plus oilseeds and products.

U.S. FEED GRAIN USAGE BY LIVESTOCK, POULTRY, TURKEYS, HORSES AND MULES, 1973-74—1975-76 LOW ESTIMATE
OCTOBER-SEPTEMBER FEEDING YEAR

Class	Million short tons			Change 1975-76 versus 1974-75	Change 1975-76 versus 1974-75 (percent)	Distribution 1975-76 (percent)
	1973-74	1974-75	1975-76 estimate			
All cattle.....	79.6	57.8	63.2	5.4	9.3	51.5
Milk cows.....	21.0	18.5	18.9	.4	2.2	15.4
Other dairy.....	2.8	2.3	2.4	.1	4.3	2.0
Cattle on feed.....	44.1	30.0	33.8	3.8	12.7	27.5
Other beef.....	11.7	7.0	8.1	.9	15.7	6.6
Poultry and turkeys.....	27.1	22.8	23.8	1.0	4.4	19.4
Broilers.....	8.0	6.9	7.6	.7	10.1	6.2
Hens and pullets ²	11.7	9.7	9.7	0	0	7.9
Replacement chicks.....	3.7	3.2	3.3	.1	3.1	2.7
Turkeys.....	3.7	3.0	3.2	.2	6.7	2.6
Hogs.....	41.0	31.7	31.0	-.7	-2.2	25.2
Other (sheep, horses, mules).....	4.8	4.7	4.8	.1	2.1	3.9
Total.....	152.5	117.0	122.8	5.8	5.0	100.0

¹ Corn, sorghum, oats, and barley.

² Layer flock only.

FEED USAGE—FEED GRAINS, OCTOBER-MARCH AND APRIL-SEPTEMBER, 1973-74 TO 1975-76

[In millions of short tons]

Time period	1973-74	1974-75	1975-76 estimate	Change 1975-76 versus 1974-75
October-March.....	95.1	75.1	72.6	-3.3
April-September.....	57.4	41.9	50.2	19.8
Total.....	152.5	117.0	122.8	5.0

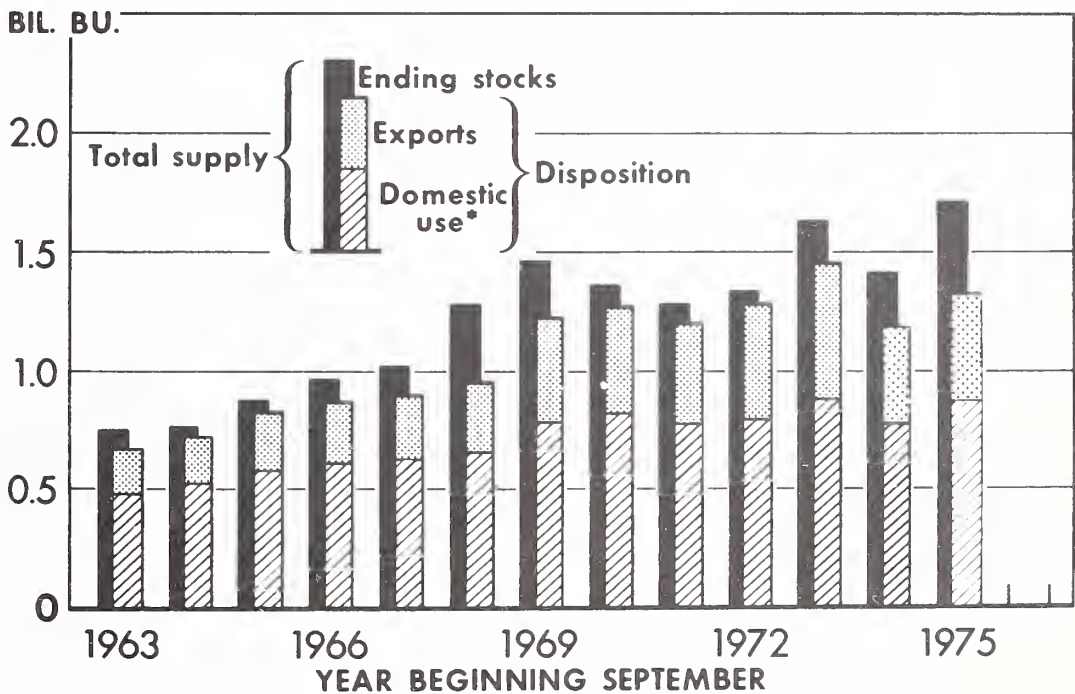
OUTLOOK FOR OILSEEDS, FATS AND OILS

[By George W. Kromer, Commodity Economics Division, Economic Research Service, USDA]

The U.S. soybean outlook is for record large supplies, significant expansion in utilization, sharp buildup in carryover stocks next fall, and lower average prices than in 1974/75. If the current soybean/corn price ratio of 2 to 1 continues, soybean plantings in 1976 could drop below 1975 levels.

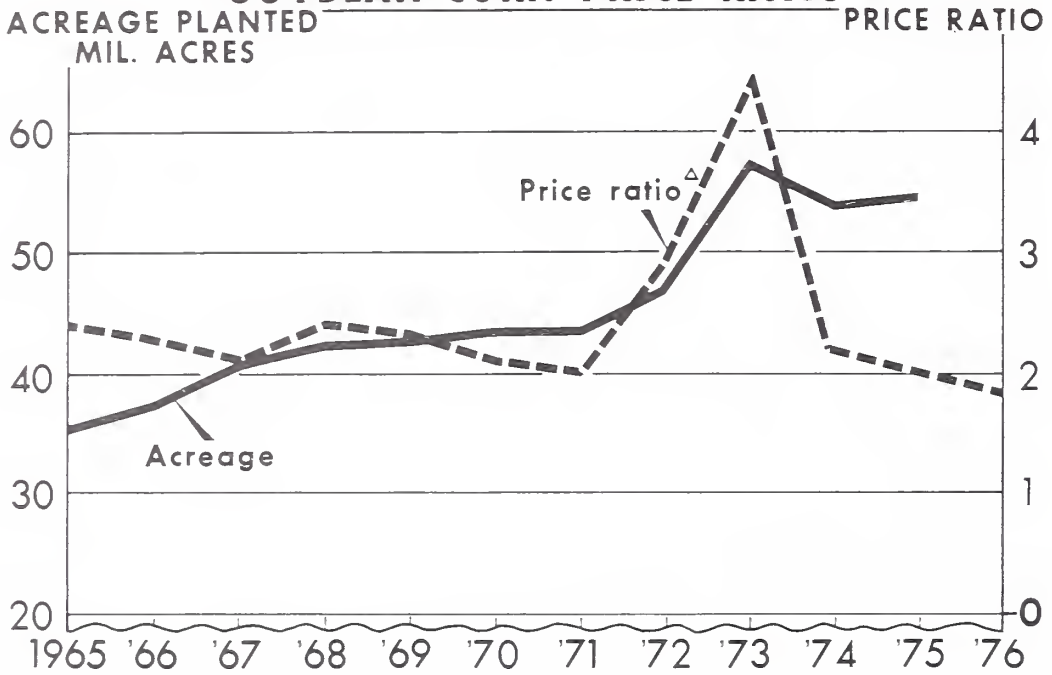
The U.S. oilseed harvested acreages this year were about 66 million, down 2 million from 1974. A sharp drop of 3 million acres (26 percent) in cotton more than offset a million acres gain (2 percent) in soybeans. Both flaxseed and peanut acreages remain unchanged from last year's level of 11½ million each. Total oilseed production (soybean, cottonseed, peanuts, and flaxseed combined) is forecast at 52 million short tons, 18 percent more than in 1974 due to better yields.

SOYBEAN SUPPLY AND DISPOSITION



*INCLUDES CRUSHINGS, SEED, FEED, AND RESIDUALS. 1975 FORECAST.

SOYBEAN ACREAGE PLANTED AND SOYBEAN-CORN PRICE RATIO



Δ SOYBEAN/CORN PRICE RATIO BASED ON AVERAGE PRICES RECEIVED BY FARMERS IN MARCH.
THE 1976 RATIO REFLECTS MARCH 1976 FUTURES AS OF EARLY NOVEMBER 1975.

USDA

NEG. ERS 405-75 (11)

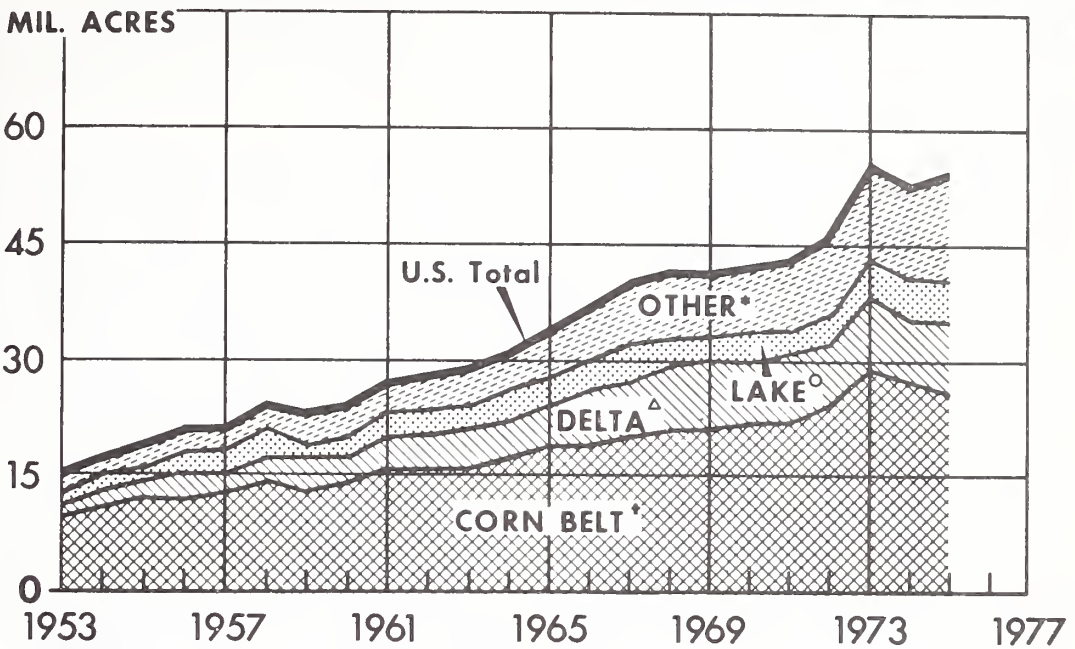
U.S. SOYBEANS

Item	1973-74	1974-75 ¹	1975-76 ²
Million acres:			
Acreage:			
Planted	56.7	53.6	54.6
Harvested	55.8	52.5	53.5
Bushels: Yield per acre	27.7	23.5	28.4
Million bushels:			
Production	1,547	1,233	1,520
Starting stocks, Sept. 1	60	171	186
Supply	1,607	1,404	1,706
Crushings	821	701	750-800
Seed, feed, etc	76	96	81
Exports	539	421	450-500
Use	1,436	1,218	1,281-1,381
Ending stocks, Aug. 31	171	186	425-325

¹ Preliminary.

² Forecast based on Nov. 1 indications.

SOYBEAN ACREAGE HARVESTED

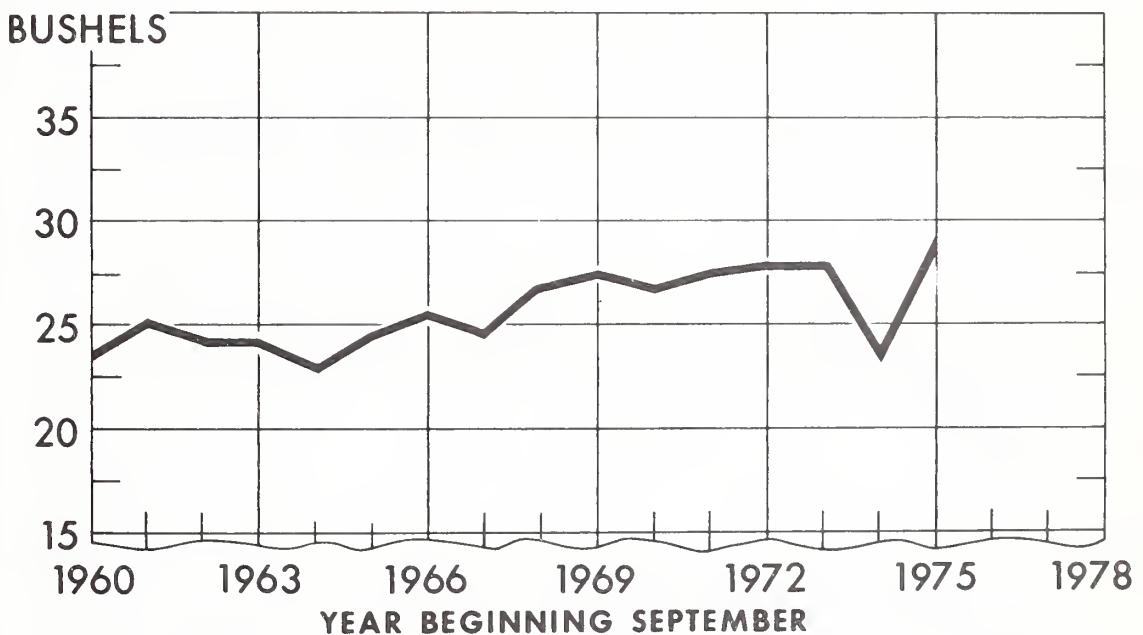


* ATLANTIC STATES, PLAINS STATES, AND ALL OTHER O MINNESOTA, WISCONSIN, AND MICHIGAN
 Δ ARKANSAS, MISSISSIPPI, AND LOUISIANA * ILLINOIS, IOWA, INDIANA, OHIO, AND MISSOURI

USDA

NEG. ERS 7661-75 (11)

U.S. SOYBEAN YIELD PER ACRE HARVESTED



USDA

NEG. ERS 774-75 (11)

PEAK SOYBEAN SUPPLIES

Large carry-in stocks this year plus the big crop are boosting 1975/76 soybean supplies to 1.7 billion bushels, 22 percent above last year and a new record high.

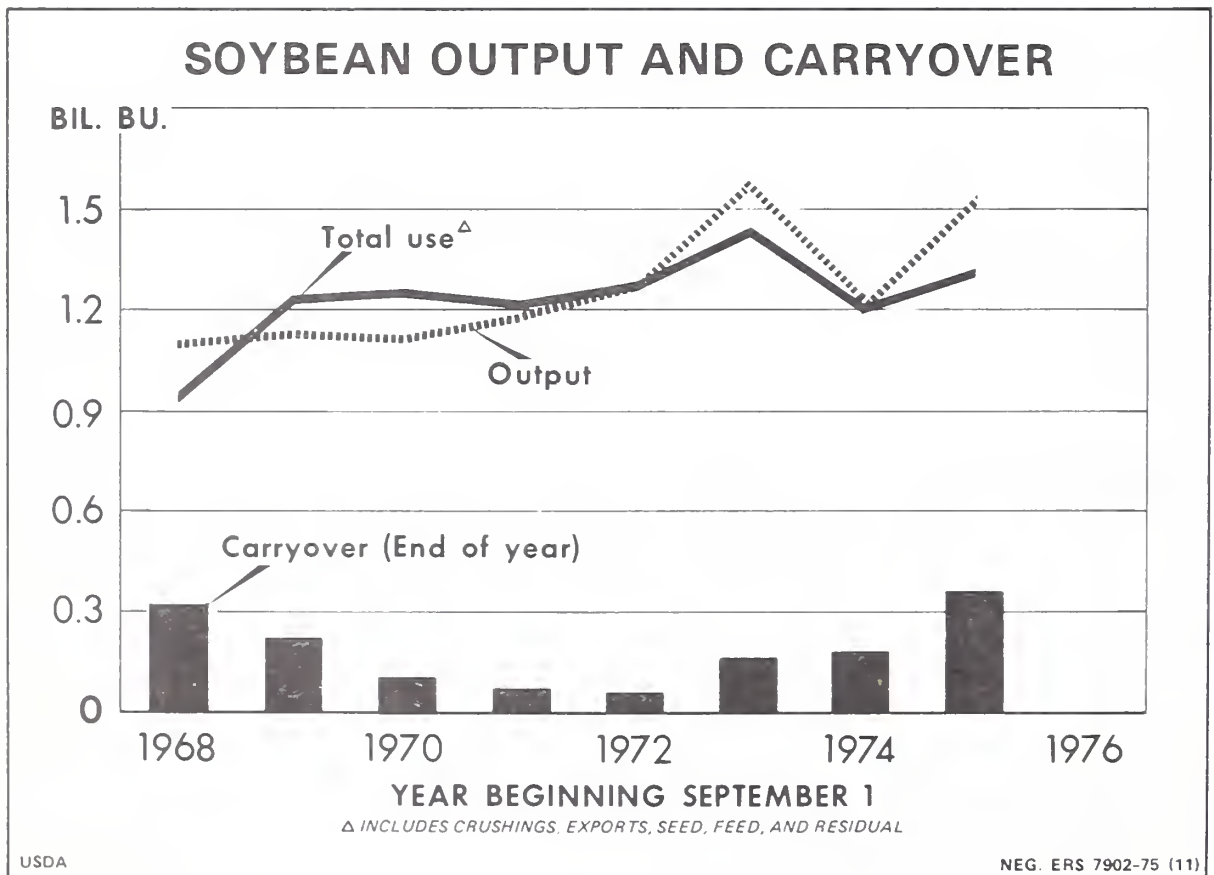
The 1975 soybean crop is estimated at 1,520 million bushels, the second largest of record, and exceeds the short 1974 crop by 23 percent. The November 1 condition of the U.S. soybean crop indicates a record yield of 28.4 bushels. As of November 9, 80 percent of the crop had been harvested compared with 75 percent last year and 70 percent average.

Although total soybean use is expected to exceed 1.3 billion bushels in 1975/76, it is not likely to match the record use of 1973/74. So this may be the third consecutive year in which total utilization falls below production. Recuperation from the recession, continuing readjustment in the livestock and poultry industries, and tough competition from foreign-produced materials are major determinants which will influence soybean use. Also, there is still uncertainty over crop outturns in other countries. The U.S. soybean export outlook appears more favorable than the small exports of last year because of reduced grain and oilseed crops in the Soviet Union and European Community.

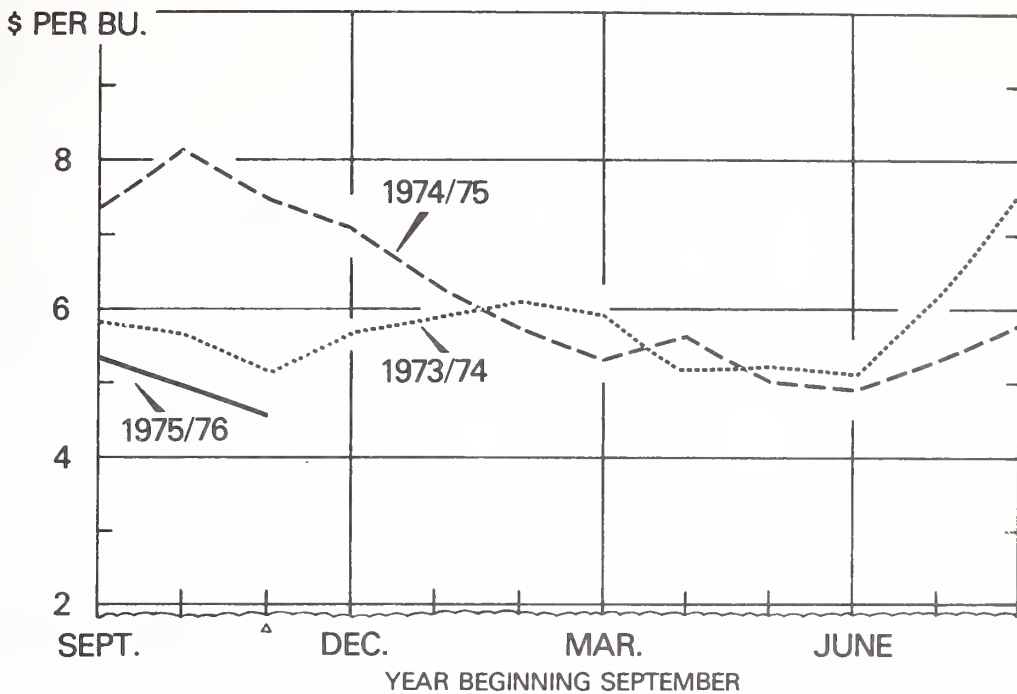
U.S. soybean carryover stocks on September 1, 1976, are projected to reach a new high—perhaps around 375 million bushels or double this year's 186 million. These soybeans will be commercially held as there is no USDA price support program for 1975-crop soybeans.

HARVEST PRICES DOWN SHARPLY FROM YEAR AGO

Prices received by farmers in October 1975 averaged under \$5 per bushel compared with over \$8 in October 1974. Harvest conditions were generally excellent this year and moved along ahead of normal. As a matter of fact, storage facilities were filled to capacity in some producing areas and grain was stored on the ground. While soybean prices may firm from harvesttime lows, the average price to farmers



SOYBEAN FARM PRICES *



* AVERAGE PRICES RECEIVED BY FARMERS.

△ ESTIMATE.

USDA

NEG. ERS 184-75 (11)

for the entire 1975/76 season is expected to fall sharply below the record high \$6.50 received in 1974/75. During the second half of the marketing year, prices will be influenced by prospects for soybean output and supplies in 1976.

CRUSHINGS UP BUT WELL BELOW CAPACITY

Soybean crushings this season are forecast at around 775 million bushels, a tenth above last year's level but below the 1973/74 record high of 821 million. A sharp pickup in domestic demand for soybean oil and meal and more favorable processing margins are the major forces supporting the higher crush. Crushings during September-October 1975 totaled an estimated 128 million bushels compared with 115 million last year.

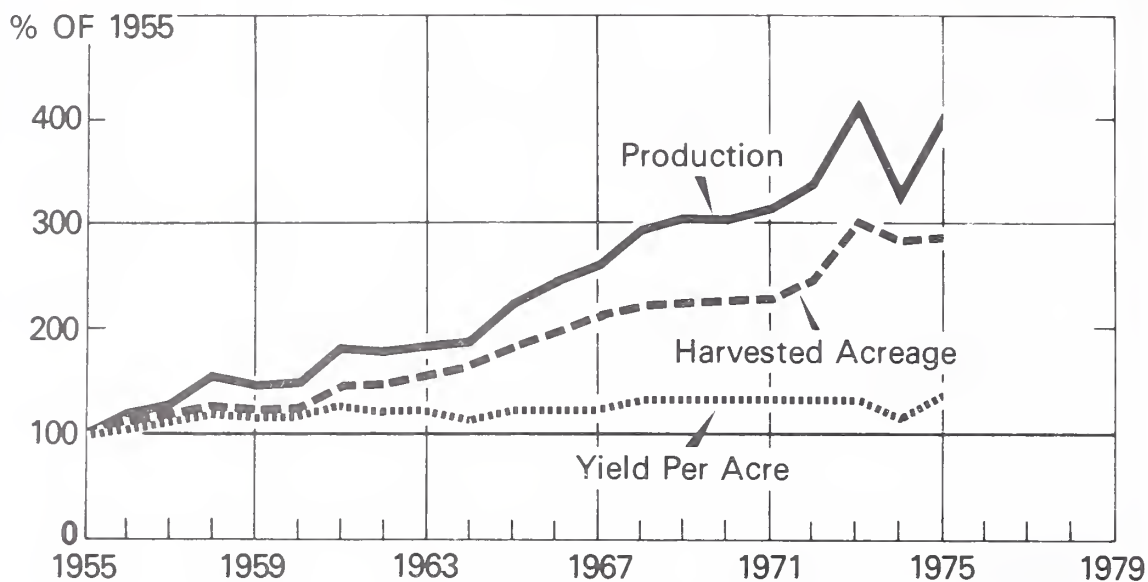
The 1975/76 season's crush would utilize only about 70 percent of the industry's processing capacity—now estimated at approximately 1.1 billion bushels. This is a little better than the 1974/75 utilization rate but would be down from the long-term average of around 80 percent.

Favorable processing margins will be necessary to support a sustained high level of crush in 1975/76. Spot processing margins last season averaged 13¢ per bushel, down sharply from the record 72¢ of 1973/74. Margins deteriorated sharply as the season progressed but improved some in the last few months of the season. Although some improvement may occur this year, it is unlikely that margins for the season will approach the 1973/74 record.

SOYBEAN EXPORTS TO INCREASE BUT FACE INCREASED COMPETITION

U.S. soybean exports in 1975/76 are forecast at around 475 million bushels, up sharply from the 421 million shipped last season but short

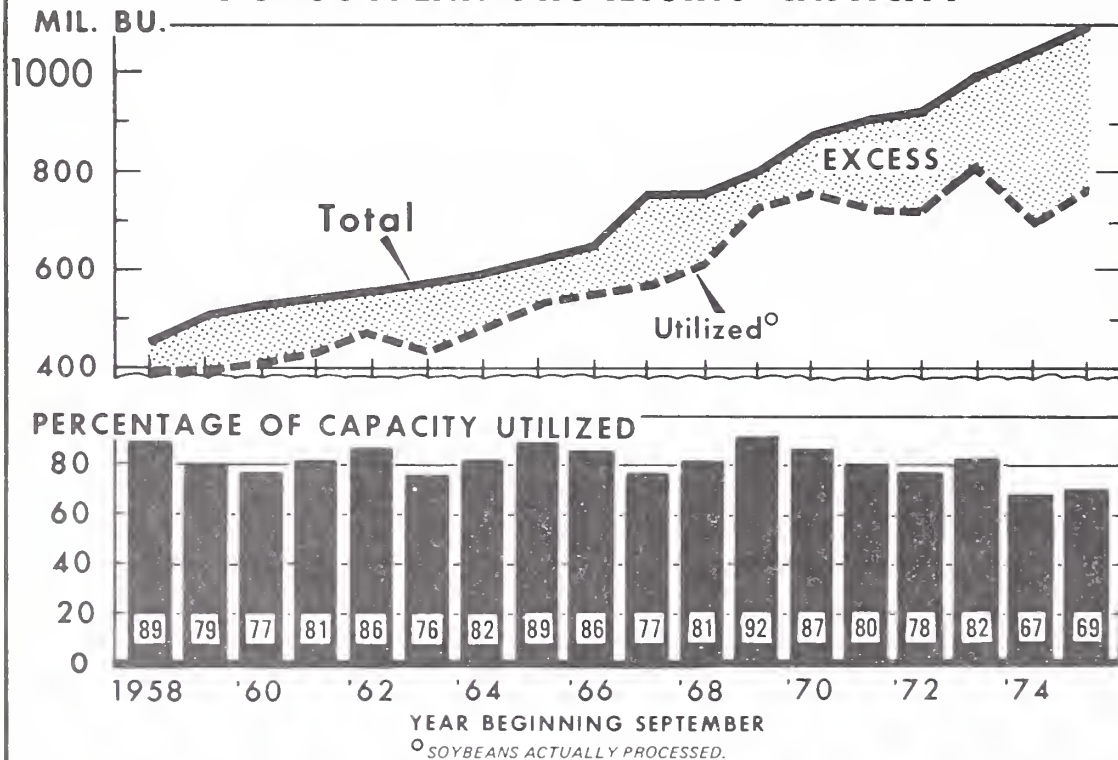
SOYBEAN PRODUCTION AND ACREAGE HARVESTED



USDA

NEG ERS 7660-75 (11)

U.S. SOYBEAN PROCESSING CAPACITY



USDA

NEG ERS 8674-75 (11)

of the 1973/74 record of 539 million. Soybeans inspected for export from September 1, 1975, through November 7 totaled 101 million bushels compared with 73 million a year ago. Lower prices and plentiful supplies should spur soybean exports.

Other factors affecting the level of soybean exports in the year ahead

include the rate of pickup in economic activity in major importing areas such as Western Europe and Japan, the expansion in world livestock and poultry numbers and changes in feeding rates, and increased competition from other foreign produced commodities.

The 1976 Brazilian soybean crop is projected at 11½ million metric tons compared with 9.6 million in 1975. This is based on expected increases in acreage as a result of improved soybean prices, the frost in coffee areas of Parana and São Paulo, as well as dry weather in the São Paulo area that may have resulted in some shift from cotton acreage to soybeans. Brazilian soybeans are planted in November-December.

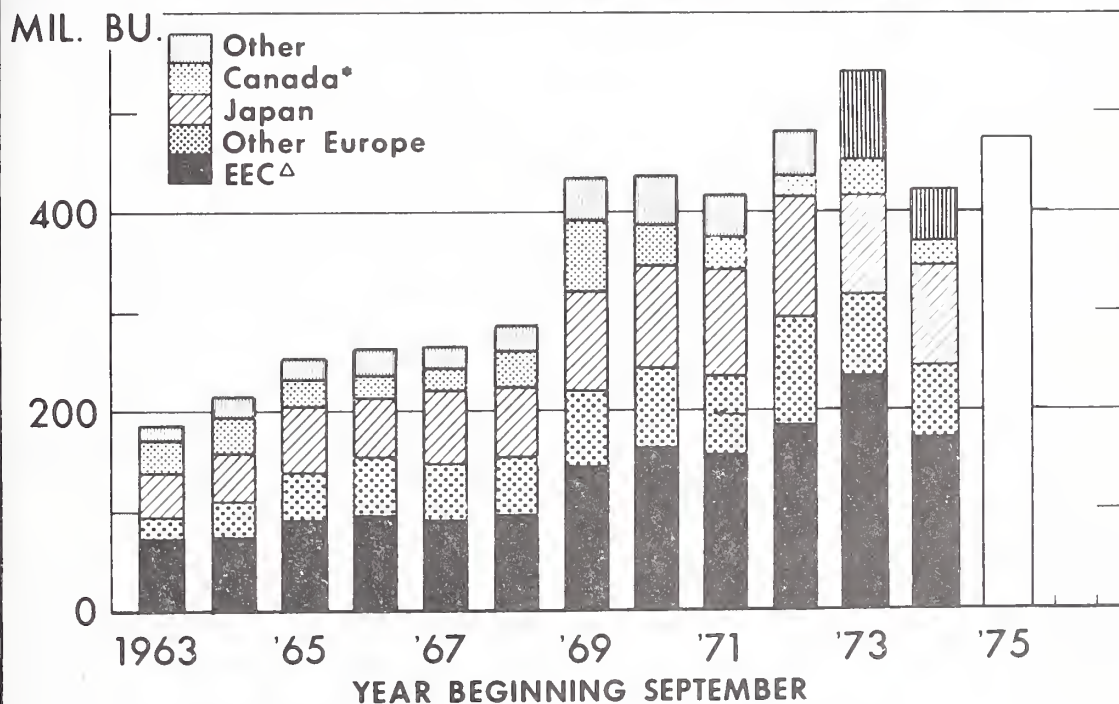
Continued expansion of palm oil in Malaysia is pushing world production in 1976 to over 3 million metric tons compared with 2.8 million in 1975. This will be the ninth consecutive year of increased output and is in line with the annual growth rate of about a tenth.

Philippine copra production in 1976 is projected at about 2 million tons, up nearly a tenth.

The Canadian 1975 rapeseed crop is estimated at 1.7 million tons, about 40 percent above the previous year.

The USSR's 1975 sunflowerseed crop is estimated at 5½ million tons compared with 6.8 million in 1974 and the record 1973 crop of 7.4 million tons. The Soviets have said they may need 1½ million metric tons of soybeans in 1975/76. Unconfirmed reports indicate that they have purchased most of this from Brazil.

U.S. EXPORTS OF SOYBEANS BY DESTINATION



* INCLUDES TRANSSHIPMENTS TO OTHER DESTINATIONS

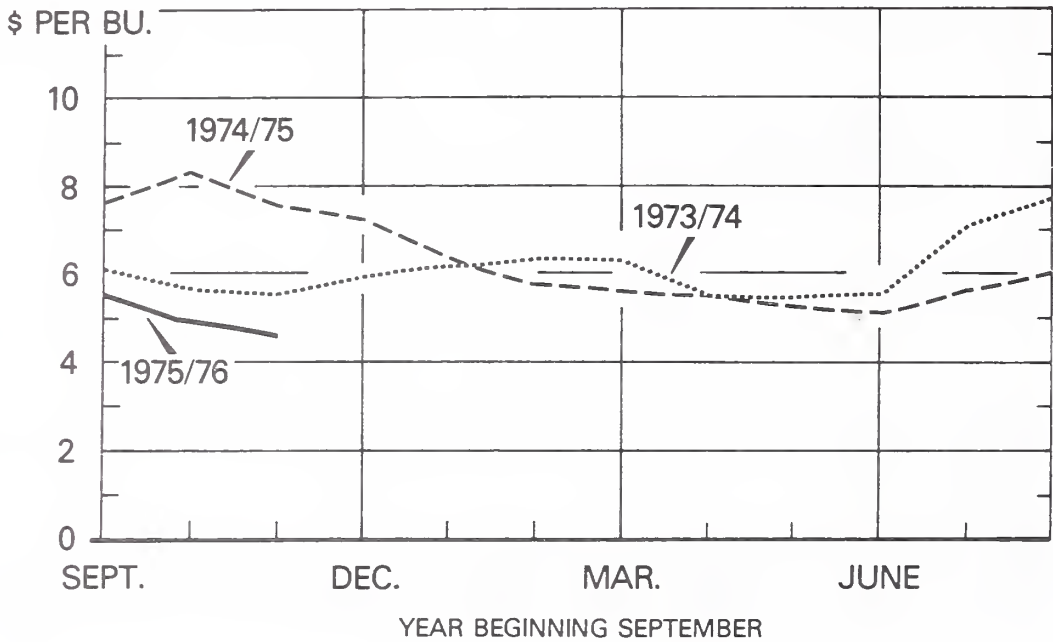
Δ INCLUDES BELGIUM, FRANCE, WEST GERMANY, ITALY AND NETHERLANDS

USDA

NEG. ERS 7900-75 (11)

SOYBEAN PRICE TRENDS

(Spot No. 1 Yellow, Decatur)



USDA

NEG. ERS 401-75 (11)

While adverse weather in some areas of the world could affect crop outturns, a large part of the production increase projected for 1976 has been realized as the crop harvest is mostly completed in the northern hemisphere countries. Brazil harvests soybeans in April-May and will influence world supplies in the second half of 1976. Palm, coconut oil, animal fats, and fishmeals are produced year around although some seasonality in output occurs.

SOYBEAN OIL DOMESTIC USE WILL EXPAND

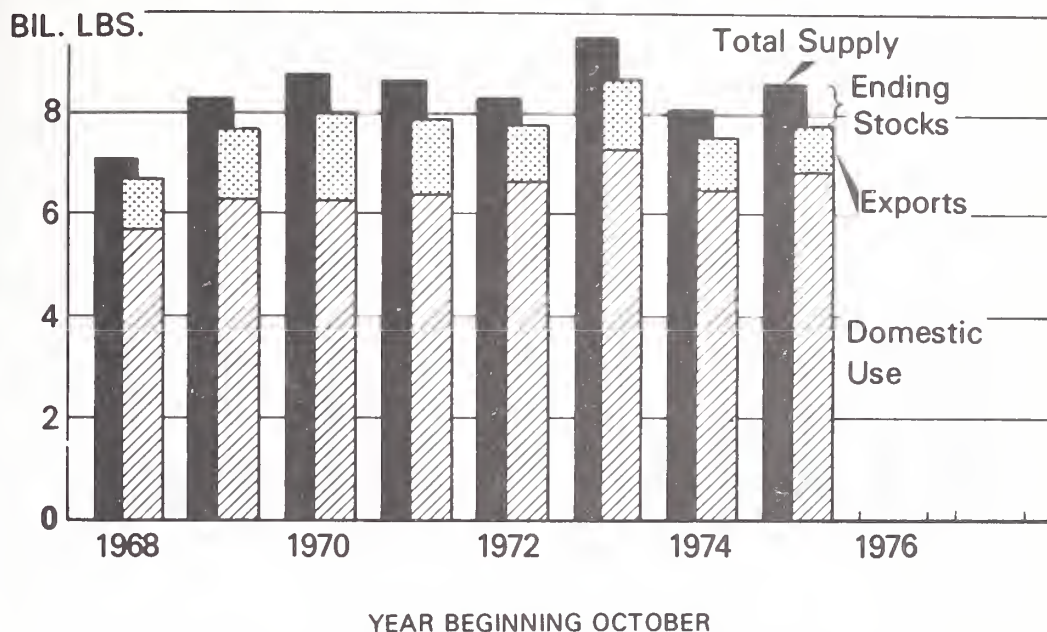
Soybean oil supplies in 1975/76 are forecast at around 8.8 billion pounds, an increase of some 7 to 8 percent over a year earlier. The supply-demand balance is as follows:

U.S. SOYBEAN OIL

Item	1973-74	1974-75 ¹	1975-76 ²
Billion pounds:			
Starting stocks, Oct. 1	0.5	0.8	0.6
Production	9.0	7.4	8.2
Supply	9.5	8.2	8.8
Domestic use	7.3	6.6	7.1
Exports	1.4	1.0	.8
Use	8.7	7.6	7.9
Ending stocks, Sept. 30	.8	.6	.9

¹ Preliminary.² Forecast based on Nov. 1 indications.

SOYBEAN OIL



USDA

NEG. ERS 7882-75 (111)

Domestic use of soybean oil is projected to exceed 7.0 billion pounds in 1975/76 or about a half billion more than last year. This is quite a contrast to last year when apparent domestic use was off a tenth. The recession, high soybean oil prices, a drawdown in pipeline inventories, increased butter use, and heavy imports of palm oil all contributed to reduced soybean oil demand in 1974/75.

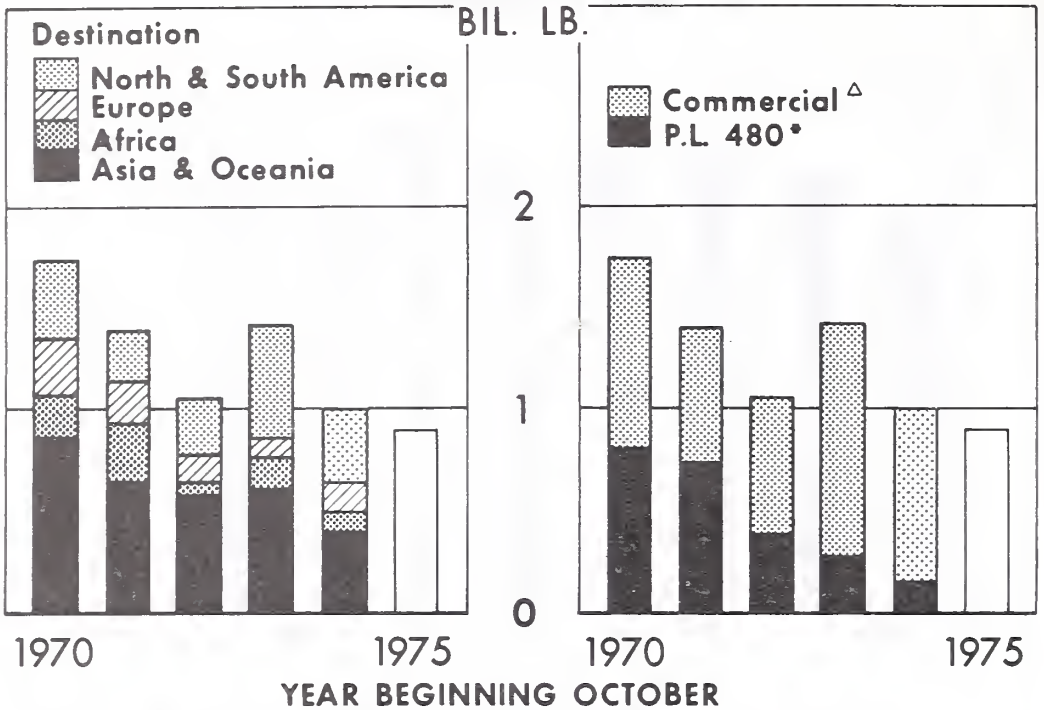
Major factors which will influence soybean oil domestic use in the year ahead include:

- The expected recovery from the recession and its influence upon unemployment, food prices, and consumer spending.
- Lower prices for soybean oil and other competing fats and oils.
- Any buildup in inventories caused by reduced stock levels over the past year and lower prices this year.
- Smaller domestic supplies of cottonseed oil and lard.
- Record world supplies of fats and oils in 1976 and prospects for increased U.S. imports of competing materials, particularly palm oil.

SOYBEAN OIL EXPORTS TO DROP

The export outlook for U.S. soybean oil is not bright because of increased competition from foreign fats and oils reduced PL 480 shipments. Exports of soybean oil are projected at around 0.8 billion pounds compared with 1.0 billion last year and 1.4 billion 1973/74. The record of over 1.7 billion pounds was achieved in 1970/71. It is interesting to note that U.S. soybean oil exports in 1975/76 will be less than U.S. palm oil imports, estimated at 850 million pounds.

U. S. SOYBEAN OIL EXPORTS



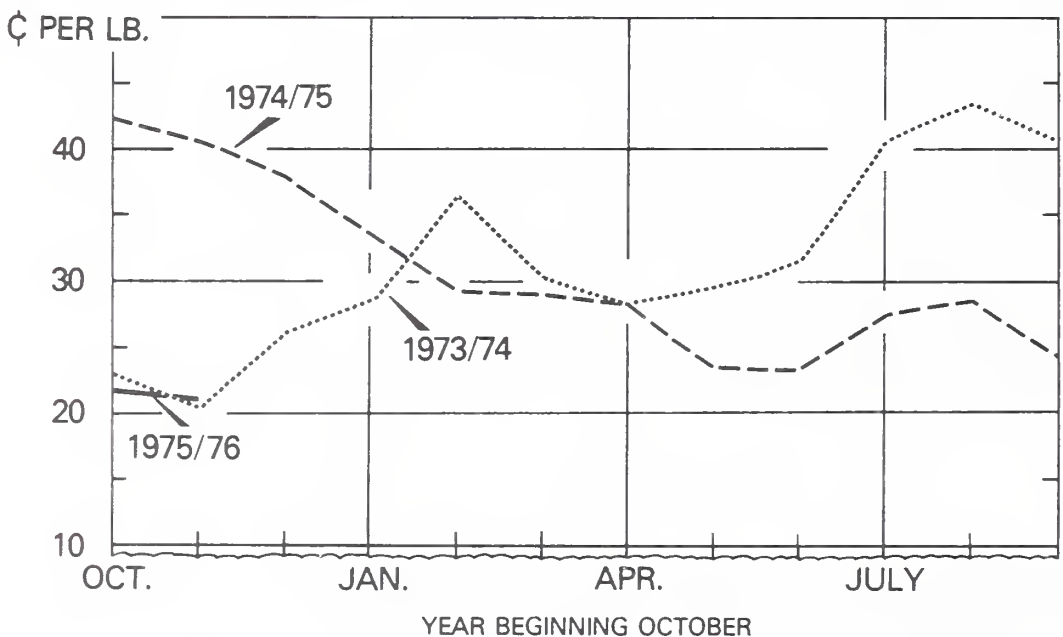
*FOREIGN SALES (TITLE I) AND DONATIONS.

Δ BARTER, CCC CREDIT AND OTHER COMMERCIAL.

USDA

NEG. ERS 8673-75 (11)

SOYBEAN OIL PRICE TRENDS (Spot, Crude, Decatur)



USDA

NEG. ERS 402-75 (11)

Approximately 100 million pounds of CCC-owned peanut oil is being made available for foreign donation programs (Title II, Public Law 480), and this is replacing soybean oil. In 1974/75 soybean oil foreign donations totaled 102 million pounds.

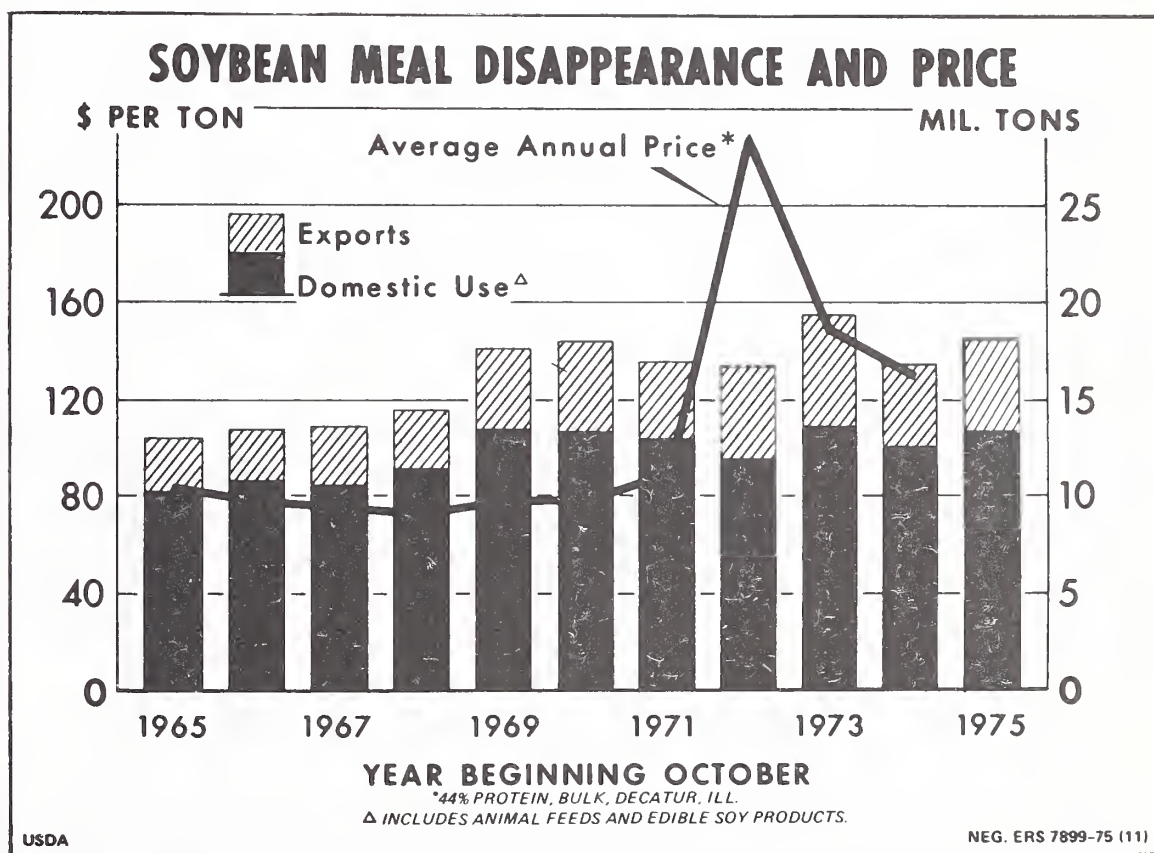
Soybean oil prices (crude, Decatur) in 1975/76 are likely to be relatively more stable than last marketing year while averaging sharply below the 30 cent per pound level. Prices in October 1975 averaged 21 cents per pound compared to 42 cents a year earlier.

SOYBEAN MEAL USE TO PICK UP

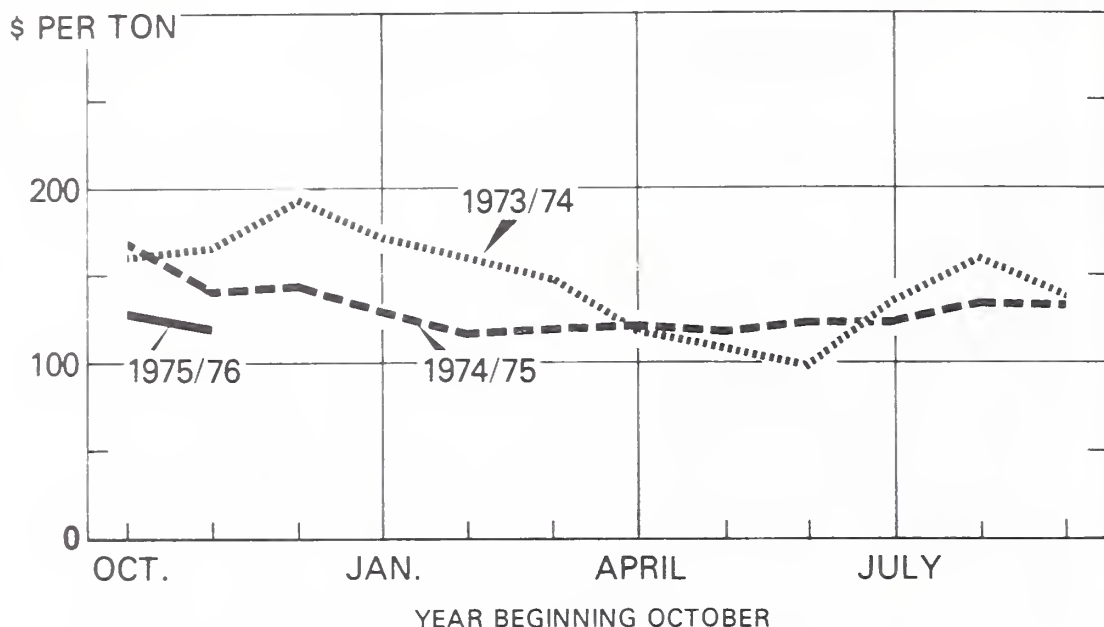
Soybean meal supplies in 1975/76 are forecast at $18\frac{3}{4}$ million short tons, about 9 percent above last year, but below the record 20 million tons of 1973/74.

Domestic use of soybean meal in the year ahead probably will make a significant recovery from the $12\frac{1}{2}$ million tons last year—possibly to around $13\frac{3}{4}$ million. Prospects for protein feed for cattle and hog feeding is rather sluggish but protein feeding by the poultry and dairy sectors likely will be strong.

In 1974/75 protein feed generally was a relatively better buy than grain. Consequently, protein feeds probably were used in feed rations to the maximum practical extent. Even though overall protein consumption fell because fewer animals were on feed, the decline was far less than the decline for grains. With large supplies of soybeans, it appears that in 1975/76 protein feeds may again be priced cheaper relative to grain concentrates.



SOYBEAN MEAL PRICE TRENDS (Spot, Bulk, 44% Protein, Decatur)



USDA

NEG. ERS 404-75 (11)

Major factors which will influence soybean meal use include:

- Expectations for profit margins for livestock and poultry producers.
- The prices for feed grains (particularly corn) and soybean meal.
- Any increase in the number of cattle placed on feed, expansion of hog and poultry numbers, and the rate of feeding.
- Foreign demand for high protein feeds and competition from foreign produced commodities, particularly Brazilian soybeans and soybean meal.

Soybean meal exports may increase slightly from the 4.3 million tons shipped in 1974/75 but with fall considerably short of the record 5½ million tons exported in 1973/74. The factors affecting foreign demand for soybeans discussed above also apply to soybean meal.

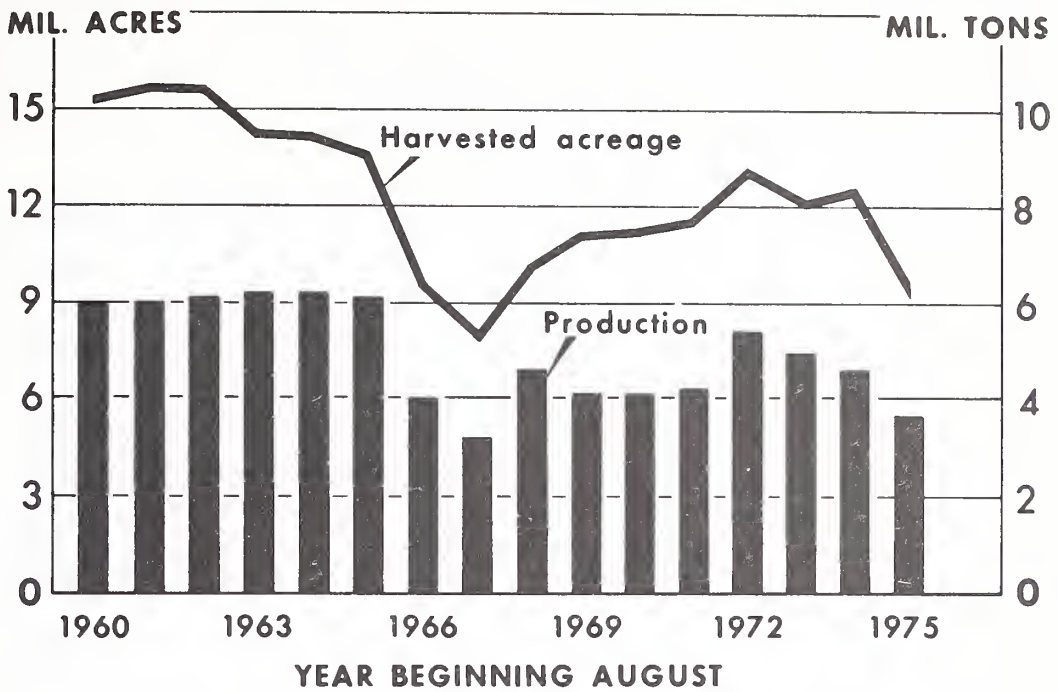
Soybean meal prices (44 percent protein, Decatur) in 1975/76 may average near the \$130 per ton level of 1974/75. Prices in October 1975 averaged \$128, compared with \$171 a year ago, but had declined to \$114 on November 11.

COTTONSEED OUTPUT OFF A MILLION TONS

The U.S. 1975 cottonseed crop is estimated at 3½ million short tons, nearly a-fourth below 1974, reflecting sharply reduced cotton acreage. But because of larger carryover seed stocks August 1, total supplies at 4 million tons are down around a fifth.

Prices received by farmers for 1975-crop cottonseed during August–October averaged \$100 per ton compared with the 1974/75 season average of \$136. Despite smaller supplies, lower prices for cottonseed oil and meal are keeping cottonseed prices down.

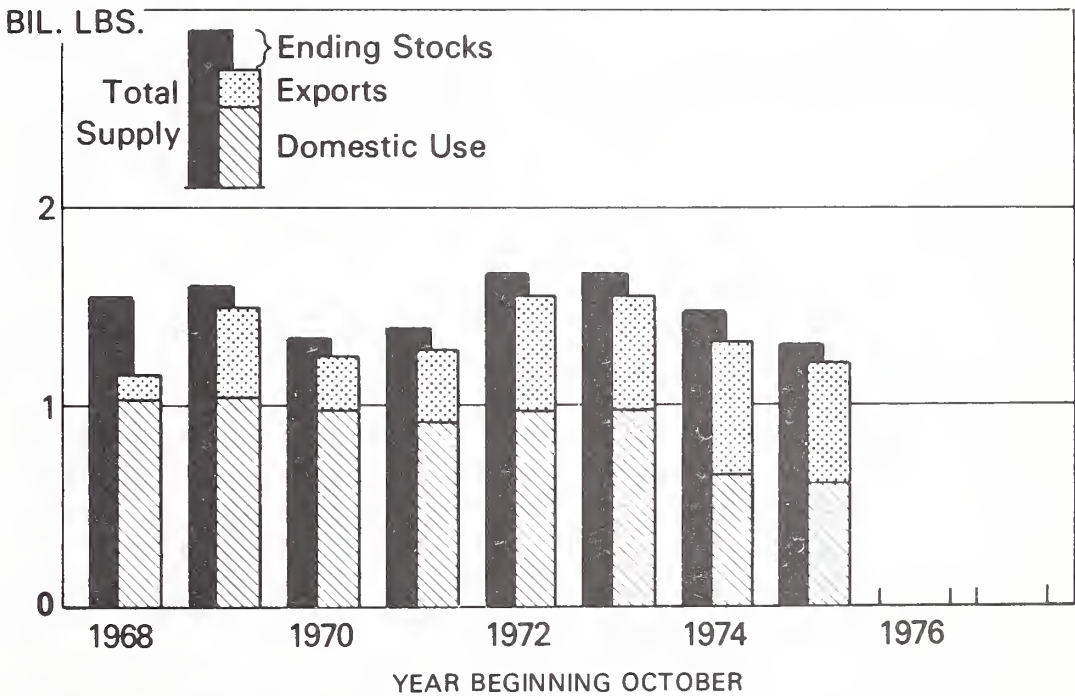
COTTONSEED ACREAGE AND PRODUCTION



USDA

NEG. ERS 4651-75 (9)

COTTONSEED OIL



USDA

NEG. ERS 5872-75 (11)

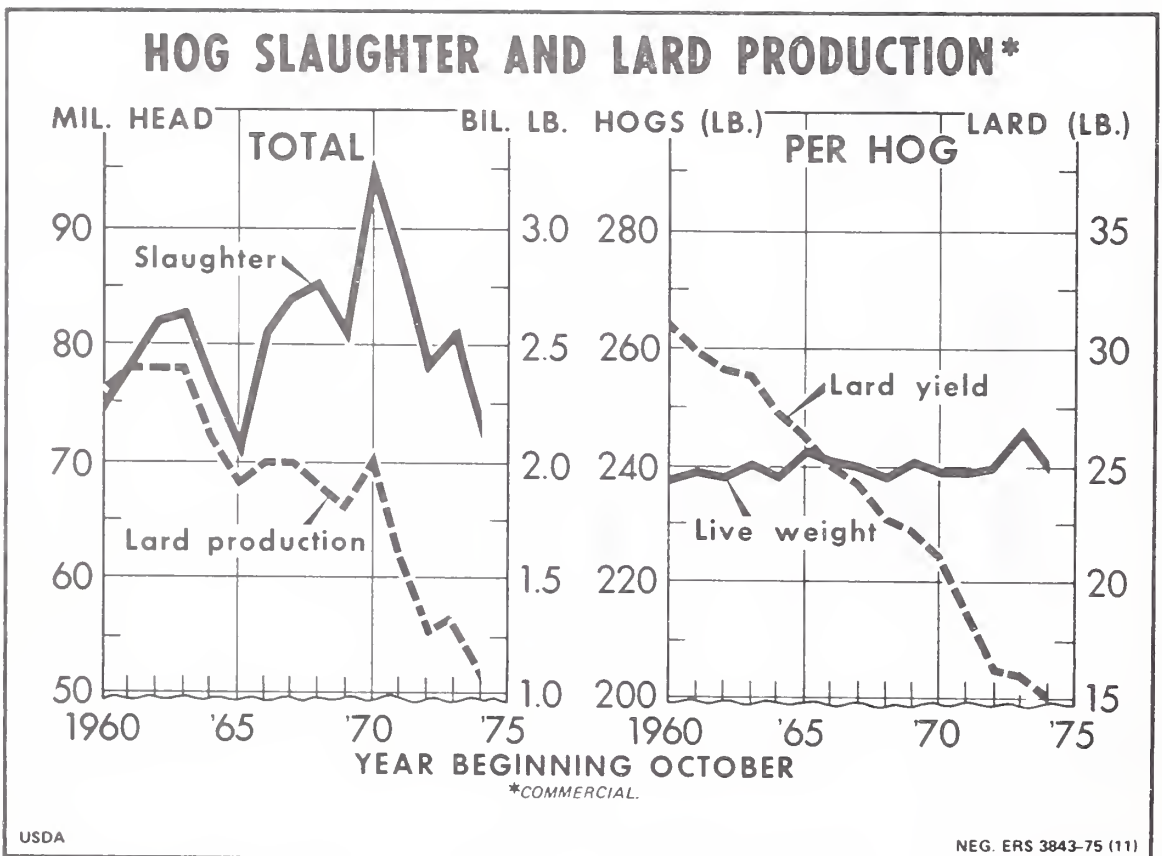
Cottonseed oil supplies are estimated at 1.3 billion pounds, about a tenth below 1974/1975. Domestic use may total around 0.6 billion pounds, not much different from last year which was the smallest of record. Exports probably will continue relatively strong, totaling around 0.6 billion pounds or down slightly from 1974/75. Cottonseed oil is a preferred oil in Western Europe and Egypt, and the bulk of our exports are to these two markets.

Cottonseed oil prices (crude, Valley) during August–October 1975 averaged 29 cents per pound, but in early November was down to 23 cents, about 20 cents below November 1974. The decline from the high levels of a year ago are due mainly to the recession, competition from lower-priced palm oil and, more recently, increased supplies of soybean oil.

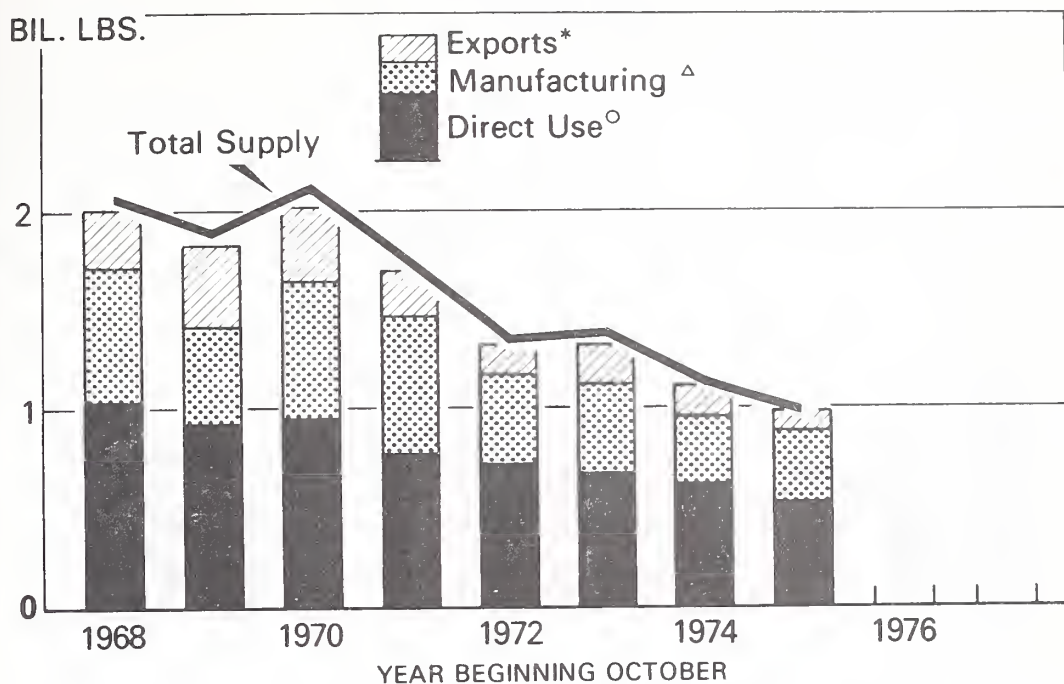
LARD PRODUCTION TO CONTINUE AT LOW LEVEL

Lard production in the 1975/76 marketing year which began October 1 is expected to fall below 1 billion pounds, down from the level of last season. The 1.1 billion pounds produced last year was the smallest on record. Continued small hog slaughter combined with declining lard yields per hog are expected to reduce output further. Hog slaughter in 1974/75 totaled only 73 million head, the lowest since 1965/66. Yield per hog averaged 15 pounds, about 1½ pounds below the previous year.

Domestic disappearance of lard probably will total under 0.9 billion pounds and below the 1974/75 level. Tight lard supplies will be a major factor restricting disappearance. Utilization is expected to be down in the direct use of lard as well as in shortening and margarine.



LARD



*INCLUDES SHIPMENTS TO U.S. TERRITORIES. Δ USE IN MARGARINE AND SHORTENING ○ LARD USED AS SUCH.

USDA

NEG. ERS 5873-75 (11)

Lard exports and shipments probably will fall somewhat below the 140 million pounds exported last season. The United Kingdom, Canada, and Mexico are now our major export markets along with Puerto Rico, a U.S. possession.

During 1974/75, lard prices (tanks, loose, Chicago) averaged 33 cents per pound, up sharply from the 25 cents of the previous year. Lard prices have declined recently along with other fats and oils, and in early November were quoted at 27 cents per pound, 9 cents below November 1974.

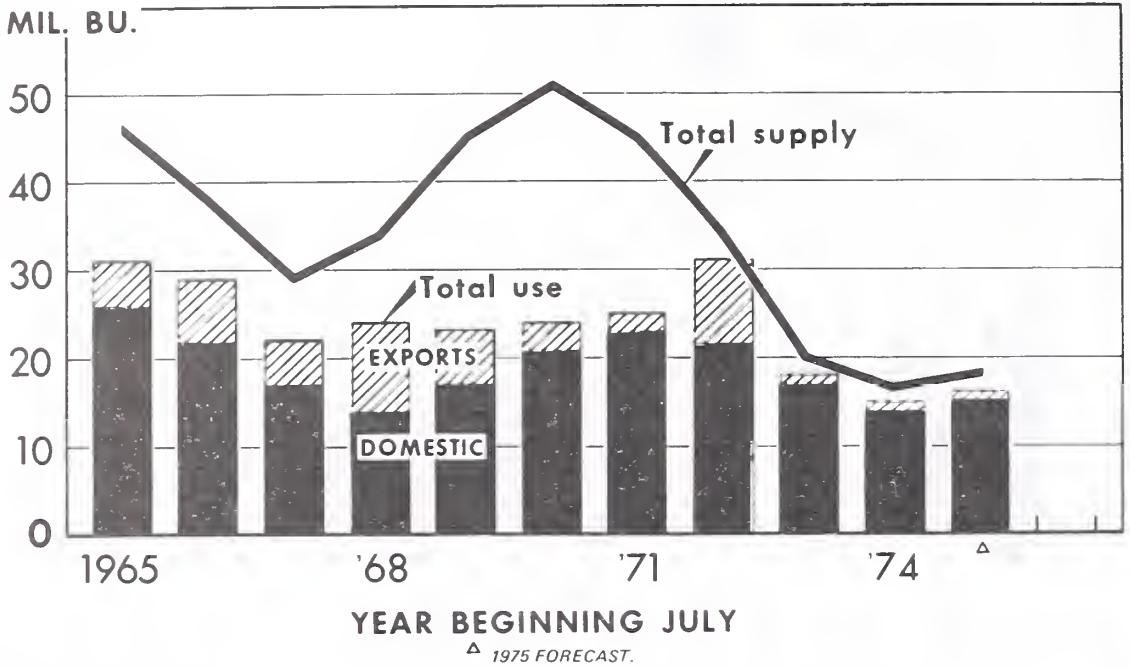
FLAXSEED SUPPLIES UP

Flaxseed supplies for the 1975/76 marketing year total 18 million bushels, about a tenth above last season. Crushings are estimated at about 14 million bushels, versus 12.7 million in 1974/75, which was the lowest on record. During July–September 3 million bushels were processed compared with 3½ million for the same period a year ago.

Exports may increase to a million bushels from the 0.4 million shipped in 1974/75. The larger supplies will increase availabilities for the export market, compared with the tight situation of last year. However, world supplies also may be larger, reducing the demand for U.S. flaxseed. Canadian flaxseed production is up a fifth this year and plantings in Argentina are up slightly.

Prices received by farmers for 1975-crop flaxseed during July–October averaged \$7 per bushel compared with \$10 the same month of 1974. The larger flaxseed supply and a generally lower price level for the entire grains complex is having its effect on prices. There is no USDA price support program for 1975-crop flaxseed.

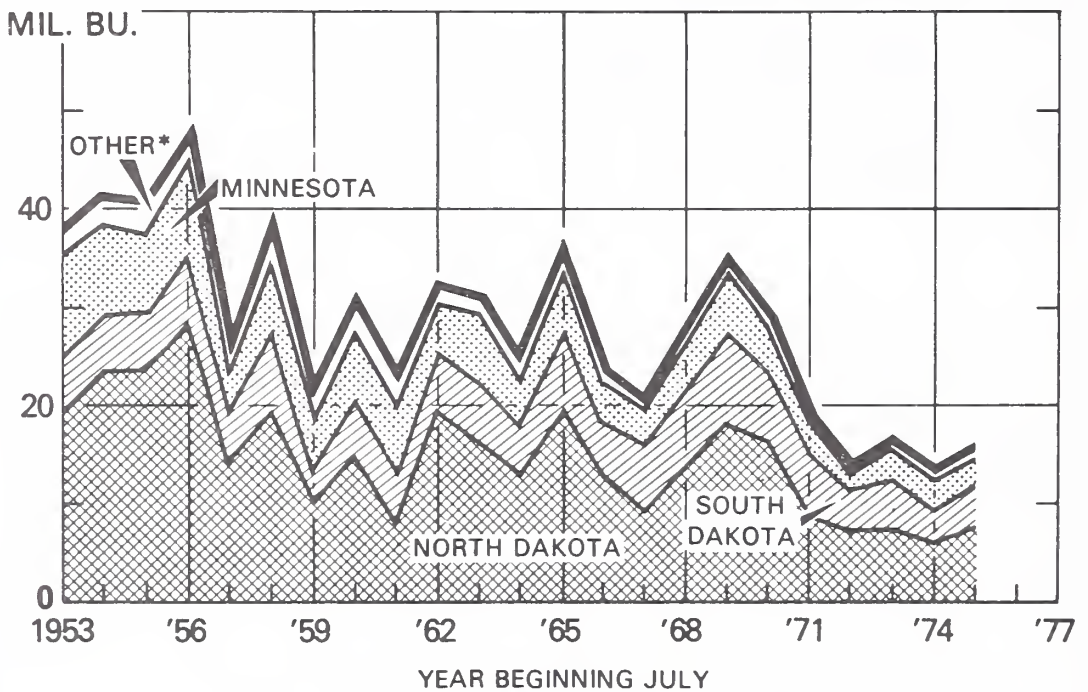
FLAXSEED



USDA

NEG. ERS 403-75 (11)

U.S. FLAXSEED PRODUCTION

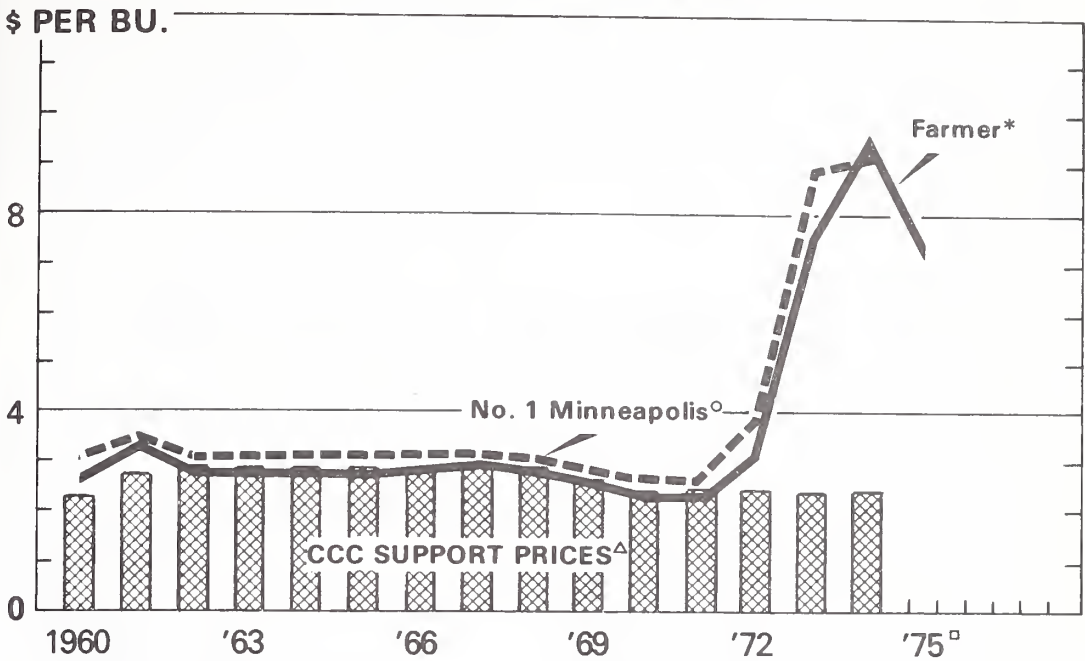


* MOSTLY TEXAS AND CALIFORNIA.

USDA

NEG. ERS 8881-75 (11)

FLAXSEED PRICES



○ SIMPLE AVERAGE OF MONTHLY PRICES.

△ FARM BASIS.

□ FORECAST. NO SUPPORT PRICE.

* SEASON AVERAGE PRICE RECEIVED, WEIGHTED BY MONTHLY SALES.

USDA

NEG. ERS 8885-75 (11)

LINSEED OIL SUPPLIES UNCHANGED

Supplies of linseed oil in 1975/76 are estimated at about 300 million pounds, about the same as the previous year.

Domestic disappearance in 1975/76 may increase some, possibly reaching 150 million pounds compared with the record low 128 million for last season. Lower prices and an improved economy are factors which should encourage increased use. Disappearance will depend primarily upon the volume used in paint and varnish production, the only large domestic outlet for linseed oil. Paint and varnish use is closely related to the business cycle, particularly the construction and home improvement industries.

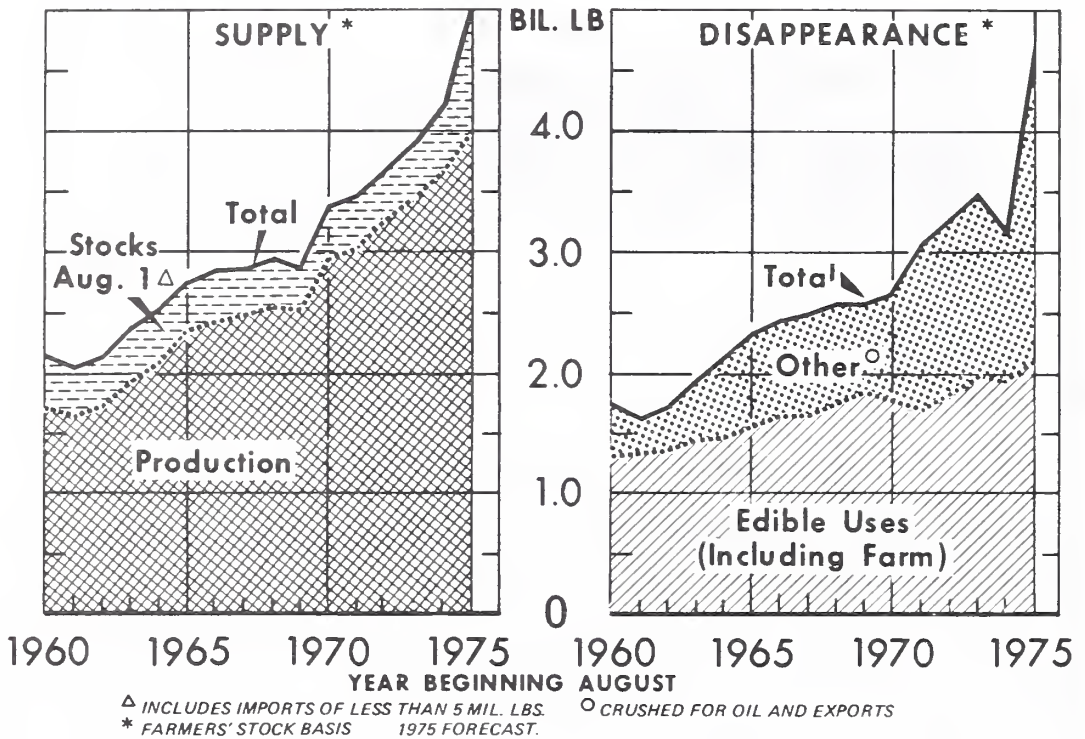
Linseed oil exports are estimated at 100 million pounds, down from the 134 million of last year. Some loosening in world linseed availabilities may reduce the demand for U.S. linseed oil. Also, competition from the domestic industry should tend to hold down exports. During July–September only about 7 million pounds were exported, compared with 32 million for these 3 months a year ago.

Last season, linseed oil prices (raw, tanks, Minneapolis) averaged 46 cents per pound, a record high. Prices this season are expected to average considerably lower. However, they still will be high in comparison to several years ago, when they were at the 10 cent level. Prices in early November at 32 cents per pound were 17 cents below November 1974.

RECORD PEANUT SUPPLIES; LARGE CCC ACQUISITIONS EXPECTED

The 1975/76 peanut supply is estimated at a record 5.0 billion pounds (farmers' stock basis), about 20 percent above the previous year. A large increase in carry-in stocks combined with the record output account for the huge supply. Stocks on August 1 exceeded a billion pounds, nearly double the 1974 level. About two-fifths of this total was in government hands, most of it contracted for toll crushing.

PEANUT SUPPLY AND DISAPPEARANCE



USDA

NEG. ERS 2359-75 (11)

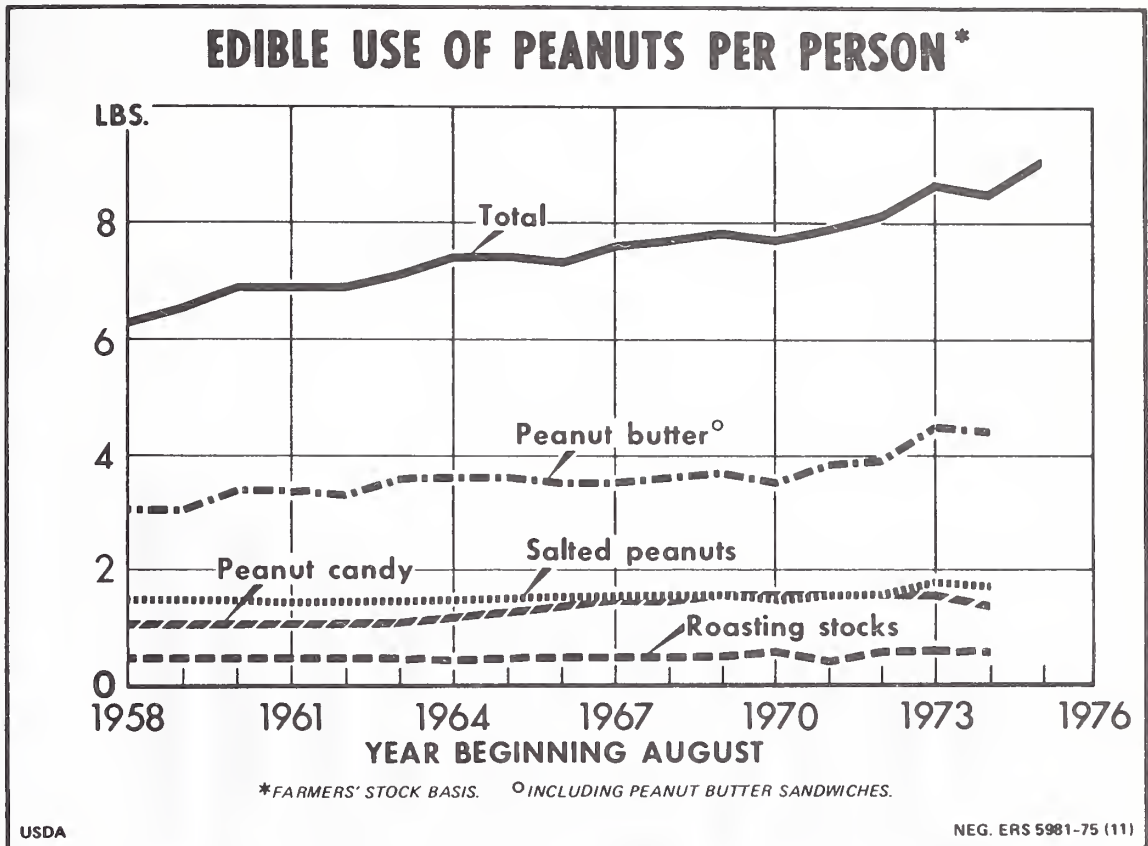
The 1975 peanut crop is estimated at 4.0 billion pounds, about 8 percent above last year. The national yield per acre of 2,653 pounds is up 162 pounds from the record high of last year. U.S. acreage allotments again were at the legal minimum of 1.6 million acres.

During 1975/76, use of peanuts in edible products is expected to increase some 6 percent to about 1.9 billion pounds (farmers' stock basis). This total would provide about 9 pounds per capita. Peanuts going for edible uses during August-September 1975 were up 6 percent over a year earlier.

In 1974/75, apparent use of peanuts in food products was off slightly from the previous year, when it increased about a tenth. These trends are based on the movement of peanuts through processing and manufacturing channels and do not reflect actual consumer purchases of peanut products nor changes in retailing inventories. According to trade sources, actual retail purchases in 1974/75 were higher than peanuts processed would indicate. Peanut butter retail purchases were reported about 10 percent above the record level of purchases in 1973/74. Reduction of inventories in the retail food industry in late

1974 and early 1975 largely account for the decline in processing in that period. Inventory reductions have run their course and peanut butter retail sales are on the upswing.

Despite the anticipated increase in consumption this year, supplies are well in excess of edible requirements and farm use. As a result CCC again is expected to acquire about one-third of the crop under the price support program.



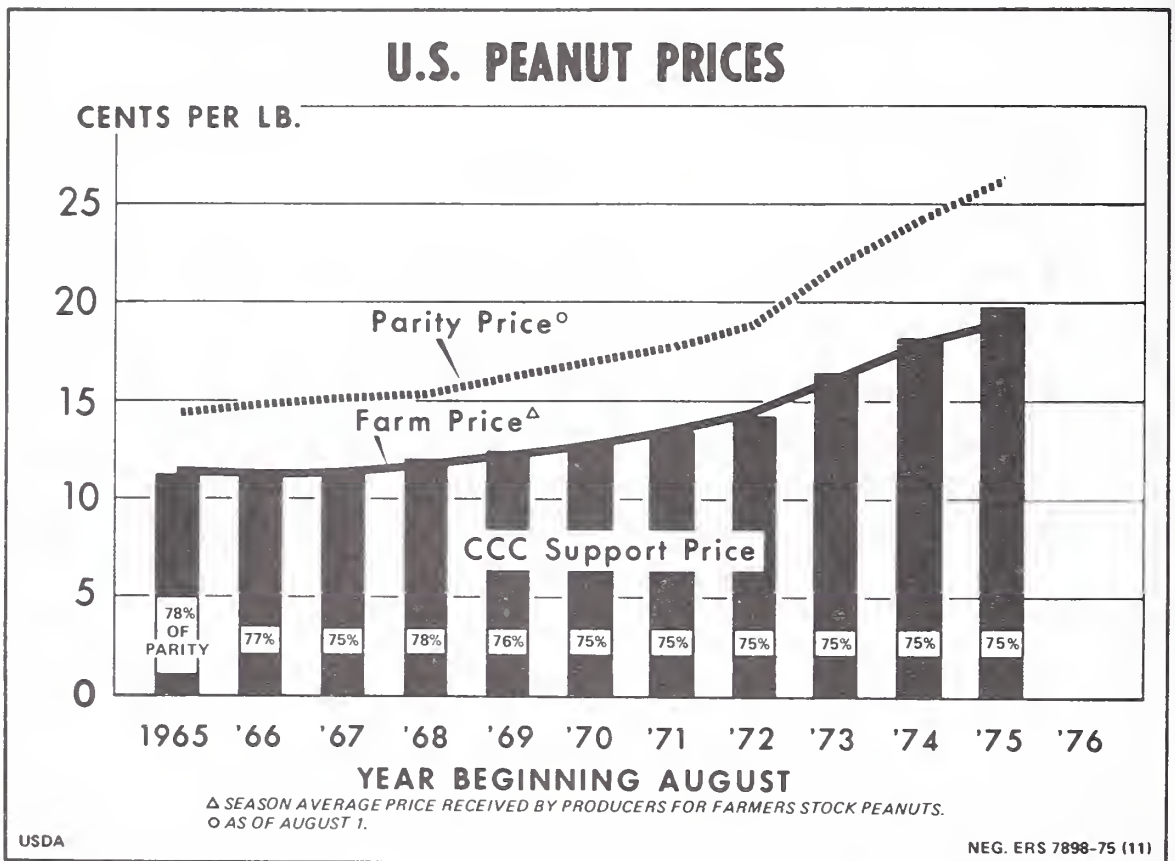
CRUSHINGS TO INCREASE SHARPLY

Peanut crushings in 1975/76 could triple the 590 million pounds of last season. The sharp increase will result from the CCC toll crush program, initiated to dispose of surplus 1974-crop peanuts. Last season a modification in the peanut program set the CCC's minimum sales policy for division sales at 100 percent of the loan level. This resulted in an accumulation of large government stocks, which are being contracted for crushings. Under terms of the program, crushers keep the peanut meal but return peanut oil to the government, allowing for adjustments for transportation and other considerations. A crush of the magnitude indicated would produce over 600 million pounds of peanut oil and over 400 thousand tons of peanut meal.

As of November 12, about 90 million pounds of crude peanut oil had been delivered to the CCC. This oil is being used in the manufacture of salad and cooking oils, shortening, and margarine for distribution through the domestic donations program. About 100 million pounds of salad oils are also being used in P.L. 480 (Title II) foreign donation programs.

Because of the minimum sales policy for diversion sales at 100 percent of the loan level, exports probably will decline sharply from the record 740 million pounds of last year. Larger world peanut production in 1975, particularly in Africa, also may tend to hold exports down. Last season, Canada, Venezuela, Japan, and Western Europe were large buyers.

Prices received by farmers during 1975/76 probably will average about 19 cents per pound, a cent above last year and near the support rate of 19.72 cents or \$394.50 per ton. This is 75 percent of August 1, 1975, parity price, the minimum price support level under existing legislation. Support by type is as follows: Virginia, \$394 per ton; Runner, \$399.



OUTLOOK FOR LIVESTOCK AND MEAT

[By George Hoffman, Commodity Economics Division, Economic Research Service, USDA]

The past 12 months have marked a period of substantial adjustments in the livestock and meat industry. In response to 1974's short feed grain crop, feeding costs moved sharply higher and livestock feeding was curtailed. Cattle on feed inventories fell nearly a third between April 1974 and April 1975, while hog inventories were reduced by about 20 percent. Fed beef and pork production in 1975 will be at the lowest levels in almost 10 years.

Fed cattle marketings have been declining from year-earlier levels since the second quarter of 1973. By the spring of this year fed cattle were only making up about half of the total slaughter supply compared with almost 80 percent of slaughter just 2 years earlier. High feed costs discouraged feeding, depressed feeder cattle prices, and encouraged culling of the cow herd. The break in feeder cattle prices during the last half of 1974 signaled the end of an expansion phase in the beef cow herd that had been in progress since 1958. Cattle slaughter picked up in the fall of 1974 and in 1975 as stockmen became discouraged with prices they received, which did not cover production costs. Cattle slaughter grew to new peaks as cattle moved to slaughter from grass. Much of the increase in slaughter came from cows which were being marketed in record numbers by the middle of this year.

Cattle slaughter in 1975 will be up about 10 percent from 1974's peak level. Reduced cattle feeding this year, however, has lowered slaughter weights about 6-8 percent, holding the increase in 1975 beef production to about 3 percent.

Fed cattle slaughter this year may fall about 10 percent short of 1974's reduced level, but increases in nonfed slaughter have been more than offsetting. Cow slaughter in the second half of 1975 is running at record levels—over a million head per month; the 6-month total may be larger than that for the entire year of 1972. For the year cow slaughter will be up 45 to 50 percent from 1974. Nonfed steer and heifer slaughter and calf slaughter this year will be half again as large as last year—perhaps even more.

The large increase in slaughter of primarily grass-fed cattle this year has been the only factor maintaining beef production, which has moderated the increase in fed cattle prices in the face of sharply reduced fed beef supplies. However, price differentials between fed and nonfed beef grew record wide, reflecting relative fed and nonfed supplies. While Choice steers in 1975 will reach a near-record average of over \$44 per 100 pounds, up about \$2.50 from 1974, feeder cattle and cow prices will average the lowest since 1969.

Conditions are now beginning to change. Given the slaughter levels expected for the remainder of 1975, the cattle herd may stop growing, and could possibly decrease by January 1, 1976. The same is possible for the cow herd. Thus, the potential for further increases in grass fed slaughter during the coming year is becoming more limited.

Higher fed cattle prices last spring put most cattle feeders back in a profit position for the first time in almost 2 years. While fed cattle prices likely will move lower this fall and winter, and feeding margins squeezed some, the longer-run profit outlook has improved with this year's larger grain crop. A recovery in the cattle feeding sector is a prerequisite to an improvement in the currently depressed feeder cattle market. Developments in the grain market will be particularly critical in this respect, and by the middle of next year the new feed grain crop will begin to influence grain markets. But if weather cooperates, lower feeding costs and favorable feeding margins could provide the first positive indications of a solid recovery in the feeder cattle market by the middle of 1976.

Hog farmers in 1975 were more fortunate than cattlemen in that they were able to quickly adjust inventories and pig crops in line with last year's reduced fed grain supply. The sharply reduced supply of pork we now face is rooted in the summer of 1974, when it first became apparent that the corn crop would be substantially reduced due to drought. Rapidly rising corn prices provided a clearly profitable alternative for the livestock feed grain farmer to sell in the cash grain market. And those farmers who did not raise their own feed found corn prices too high compared with the price of hogs for continued operations as usual. The resultant sell-off of breeding stock was substantial. Farrowings for the 1974 September–November pig crop were reduced 11 percent, when only a 2 percent reduction was planned earlier in the year.

On December 1, 1974 hog inventories were down 10 percent from a year earlier, and hog farmers indicated plans to reduce farrowings for the spring pig crop by 15 percent. Although grain prices moved lower in the spring, improving returns to hog feeders, feed costs were still apparently too high to generate much enthusiasm for raising more hogs. Thus, the spring pig crop was actually reduced by more than 20 percent, producing the smallest spring pig crop in over 40 years.

Although first half 1975 hog slaughter was down 11 percent from a year earlier, and the smallest since 1966, hog prices increased very little until May. From October 1974 through April 1975, barrows and gilts at seven markets sold mostly between \$38–\$40 per 100 pounds, as large beef supplies and the depressed cattle market held off price increases in the hog market. By early May, however, seasonally reduced beef output, further declines in pork supplies, and sharply higher cattle prices boosted hog prices higher, reaching almost \$60 per 100 pounds in late July.

As hog slaughter through the summer and early fall slipped 20–25 percent below a year ago, barrow and gilt prices continued up, peaking above \$65 per 100 pounds on most markets in late September and early October. Hog prices unexpectedly turned sharply lower in mid-October, dropping \$10–\$15 per 100 pounds in just 3 weeks. Apparently, the

grain harvest temporarily disrupted the normal movement of hogs to market. Following several weeks of squeezed marketing margins, packers were lowering bid prices at about the same time that a backlog of heavy hogs began moving to slaughter. Prices have recently turned up again, and during October–December likely will average about \$15 per 100 pounds higher than a year earlier.

Commercial hog slaughter for 1975 could total around 67–69 million head, down 16 to 18 percent from 1974. Reduced average slaughter weights this year may reduce pork production 17 to 19 percent from 1974 and be the lowest since 1966. Barrow and gilt prices will average record high this year at about \$50 per 100 pounds, up \$15 from 1974. For the first time, prices of barrows and gilts this year will average higher than Choice steer prices.

PROSPECTS FOR 1976

The outlook for livestock and meat supplies through the middle of 1976 will be heavily influenced by developments in the domestic feed situation over the next few months. The grain harvest season is typically a time when many livestock producers plan feeding activities for the upcoming feeding year. Producers make their decisions based on the supply of feed available and probable levels of feed grain prices for the year ahead. Cattle feeders generally place about a third of the annual total of cattle on feed during October–December. Hog producers make their decisions during the fall months for March–May farrowings, which provide almost a third of the annual pig crop.

Feed supplies for the 1975/76 marketing year are substantially larger than in 1974/75, when crops were severely damaged by adverse weather. Feed grain production on October 1 was estimated to be 202 million tons, up 23 percent from last year. Although down from earlier estimates, the 1975 corn crop may be a record 5.7 billion bushels, also up 23 percent from 1974.

Larger feed supplies usually point to lower feed prices and increased livestock feeding, but conditions this year are somewhat unique. Carry-over stocks from the 1974 crop fell to the lowest level in several years. As a result, the total feed grain supply for 1975/76 is up around 17 percent. Also, short grain crops in other countries around the world have added a new dimension to the demand for feed grains and thus to the U.S. livestock feeding economy. Shortfalls in feed grain production in the USSR prompted substantial purchases of U.S. feed grains, boosting prices earlier this summer and adding speculation about future grain sales and their impact on feeding costs.

Even so, this year's feed grain crop is big enough to allow for increased livestock feeding, in addition to expanded levels of feed grain exports. Grain prices have recently moved lower, and the cost of feed in the upcoming year should be significantly less than in this year. Livestock feeders are already beginning to respond. Placements of cattle on feed are picking up after 2 years of decline. Hog producers are reducing farrowings less than they had earlier planned for this fall, and an increased pig crop is in prospect for this winter.

CATTLE

The possible range of cattle slaughter levels for 1976 is wide, and by about midyear will begin to depend upon prospects for the upcoming feed grain crop and range feed conditions. But with growth in the cattle inventory stopped, the potential for slaughter is no greater than it was for 1975. Most of the increases in cattle slaughter, especially nonfed slaughter, may be largely behind if weather conditions are fairly normal through most of next year.

More fed beef is in prospect for 1976. The October 1 cattle on feed inventory, at 9.3 million head, turned slightly above year-earlier levels for the first time since October 1973, and further increases are in prospect in the coming months. Feedlots have the capacity, feeder cattle are available, and feeding costs are generally more favorable than they have been for some time—most of the ingredients for expansion. About the only question remaining is whether feeders are ready, willing, or able to continue expansion recently begun. Corn Belt cattle feeders must decide among alternatives of cattle feeding, hog feeding, or cash grain sales. Feeders in the larger commercial lots of the Southwest may have to attract investment capital back into feeding after losing many customers in 1973 and 1974. Recently, the largest year-to-year increases in cattle feeding have been in the Southwest, possibly indicating that given an opportunity for reasonable returns, the capital required for expansion will be available.

Placements of cattle on feed during October–December may continue above year-earlier levels, but possibly by a smaller margin than in the previous 2 quarters. Although feed costs have recently declined, fed cattle prices have also moved lower, and feeding margins are not as favorable as earlier this year. Also, with spring fed cattle futures selling in the low \$40's, opportunities to lock in profits in cattle feeding are somewhat limited. But if placements are up and fed marketings during October–December about match expressed intentions, the cattle on feed inventory by January 1, 1976, could be up 10 percent or more from a year earlier.

While placements have been up significantly since the spring of 1975, increases in fed cattle marketings are slow in coming, and rises in fed beef output through the first half of next year might be more modest than increases in placements would suggest. During the past 1½ years, feeders went through a period of reducing both inventories and placements more than marketings by increasing turnover rates, and shortening time on feed by placing heavier cattle. But this situation could turn around again as feedlot inventories are rebuilt and more lighter cattle are placed on feed. The supply of heavy feeder cattle is probably not big enough to sustain a large movement of heavy cattle into feedlots. Supplies of heavy feeders by the beginning of the year could be relatively short, since these are the cattle that have been preferred for both placement and slaughter as nonfeds during the past year. A large increase in lighter cattle on feed is only likely with reduced feeding costs; but if this occurs, as now seems likely, the buildup of cattle on feed inventories may help take some pressure off the slaughter market.

If placements on feed remain up this fall, fed cattle marketings may begin to exceed year-earlier levels during January–March, followed by

larger increases in April-June—perhaps 15 percent or more. Even so, fed beef supplies will probably remain under recent peak years, and seasonal reductions in nonfed slaughter could offset much of the increase in fed marketings through midyear. Most of the liquidation in cow herds currently underway will likely be completed before supplemental winter feeding is required, and cow slaughter will likely taper off through the winter and spring. Nonfed steer and heifer slaughter, also, will likely turn lower through the first half of next year, considering expanded feedlot demand for a smaller supply of these cattle.

While remaining above year-earlier levels, total beef production may decline through the spring of 1976 from expected fall peaks, reflecting seasonally declining nonfed slaughter. Under these conditions fed cattle prices might turn up again from late fall and early winter lows, despite increased fed beef output. Current wide price spreads between fed and nonfed beef at the live, wholesale, and retail levels could then begin to narrow, reflecting a shift in composition of the beef supply toward more fed beef.

Range conditions, feed prices, and prospects for the new feed grain crop will begin to influence both the kind and amount of cattle slaughter about midyear. Although the herd has stopped growing, it is still quite large and vulnerable to dry conditions which could force more range cattle to slaughter, drive up feed prices, and accelerate liquidation of the cattle inventory. Being more optimistic, however, if range feed conditions are adequate and another good grain crop is in prospect around midyear, nonfed steer and heifer slaughter and cow slaughter could continue lower in the last half of the year and help offset further increases in fed cattle marketings. In this event second half cattle slaughter might be smaller than this year, but increased slaughter weights could hold beef production to record or near record levels, placing downward pressure on fed cattle prices.

Assuming no further major disruptions in the feed grain market, it now appears cattle slaughter next year might be up 2-4 percent from this year, with all the increase in fed cattle slaughter. Increased slaughter weights may raise beef production 3-5 percent above this year's record level. If placements continue to increase, nonfed steer and heifer slaughter will likely be significantly reduced, especially in the second half of the year. Cow slaughter in 1976 might be as large as this year, with increases in the first half of the year offsetting reductions in the second half. Feeder cattle prices and range feed availability will be the important factors influencing cow slaughter later next year.

If consumer demand holds up under these slaughter conditions, fed cattle prices in 1976 may then average near or just above the 1975 level—in the \$44-\$48 range. Highest prices may occur around midyear if nonfed slaughter supplies decline as expected. However, given the shift in composition of the beef supply next year, toward more fed beef, fed cattle prices may not be as upward responsive as they were this year to seasonal reductions in the total beef supply.

General trends in feed prices and range feed availability will determine the movement and prices of cows and feeder cattle in the second half of next year. But if feed grain crops look good and pastures hold up well during the summer, cow and feeder cattle prices could be increasing significantly, bringing the first financial relief in 2 years to

cow-calf producers. Estimating feeder cattle price levels a year from now requires a great deal of speculation; but if feed costs in the fall of 1976 run near current levels, feeder cattle prices might exceed fed cattle prices again, and run into the mid-to-upper \$40's—perhaps \$50 for higher grade steers on Midwestern markets.

CATTLE HERD MAY STABILIZE

Although the cow herd on January 1, 1976 could be 1–3 percent smaller than at the beginning of this year, the 1976 calf crop could still be about as large as 1975's. Fewer heifers calving, culling of all less productive cows, improved winter feed conditions, and better general conditions of cattle going into the winter might improve calving rates sufficiently next year to produce another near-record crop. Given expected cattle slaughter levels for 1976 and some reduction in calf slaughter next year, the cattle inventory may stabilize or continue slightly lower by January 1, 1977.

TABLE 1.—CATTLE BALANCE SHEET

	Jan. 1 inven- tory	Imports	Calf crop	Slaughter		Death loss	Exports	To balance
				Cattle	Calves			
1970.....	112.4	1.2	45.9	35.4	4.2	4.3	0.1	—0.9
1971.....	114.6	1.0	46.7	35.9	3.8	4.5	.1	—1
1972.....	117.9	1.2	47.7	36.1	3.2	5.1	.1	—7
1973.....	121.5	1.0	49.1	34.0	2.4	6.5	.3	—8
1974.....	127.7	.6	50.8	37.3	3.2	6.1	.2	—4
1975 ¹	131.8	.4	51.8	41.1	4.6	6.3	.3	.....
1976 ¹	130–132.0	.5	51.8	42.5	4.0	6.1	.3	.....
1977 ¹	129–131.0	.....	.....	.....	.....	.....	.....	.....

¹ Projected.

HOGS

Hog producers are beginning to react to recent record high hog prices and favorable feeding margins, but significant increases in pork production are not likely before the second half of 1976. The September 1 quarterly survey of producers in 14 States indicates reductions in farrowings for the balance of 1975 will not be as large as earlier planned, and some expansion in farrowings is in prospect for this winter. However, even though producers are now beginning to respond, pork production through early 1976 will continue below depressed year-earlier levels considering reductions in farrowings which have already taken place. If hog producers carryout reported intentions to reduce farrowings this fall, the June–November pig crop could be reduced by about 10 percent from a year earlier and be the smallest since 1954. A planned increase in the December–February pig crop will probably not result in increased pork production before the summer of next year.

Based on the September 1 distribution of market hogs on farms by weight groups, hog slaughter during the first quarter of 1976 could be off 14 to 16 percent from a year earlier. Most of the hogs slaughtered during January–March will be those in the September inventory weighing less than 60 pounds—largely the June–August pig crop. The inventory of lightweight hogs on September 1 was down 13 percent,

and corresponds with a similar percentage reduction in farrowings during the June–August period. Although reductions in hog slaughter and pork production will become smaller as the year progresses, market hog prices are expected to remain relatively strong and could possibly run in the mid-\$50's through the winter.

The September hogs and pigs report indicated farrowing intentions for September–November to be down 7 percent from the fall quarter of 1974. These pigs will provide the bulk of the pork supply for the spring quarter of 1976. If farrowings are reduced the full 7 percent, a similar reduction in slaughter from a year earlier seems likely for the April–June period. If so, commercial slaughter will likely trail the 1975 level by 5 to 6 percent but may be up 7 to 9 percent from the winter quarter. Hog prices seem likely to slip further from the winter level as slaughter rates increase. However, pork supplies will remain relatively tight through much of the first half of 1976, and prices for barrows and gilts during the spring quarter still may average in the low-to-mid \$50's.

Breeding decisions for farrowings during the December 1975–February 1976 period are behind us; thus potential slaughter levels through the summer of next year are already largely determined. On September 1, hog producers indicated plans to increase farrowings for this pig crop 6 percent above a year earlier. If realized, this would represent the first quarterly increase in farrowings since December 1972–February 1973. The feed grain and hog price relationship which develops over the next 2–3 months will largely determine the number of sows to farrow in the March–May period; thus, potential slaughter for the fourth quarter of 1976.

If hog producers carry out plans reported on September 1, more pork is in prospect for the second half of 1976, beginning with small increases around midyear and possibly leading to larger increases toward year-end. However, during periods of major industry liquidation or expansion, the production response often exceeds earlier expectations. Grain prices have moved significantly lower since the September 1 survey of producers, and increases in the December–February pig crop could be greater than were earlier planned. Although the recent sharp decline in hog prices may give some producers second thoughts about expansion, further large increases now appear likely for the March–May pig crop, with farrowings up possibly 10 percent or more.

Producers have the flexibility to increase (or decrease) production in a relatively short period of time. Considering the past several months of substantial profits, and an outlook for reduced feeding costs, increases in hog slaughter during the second half of 1976 will likely fully offset reductions in the first half and may be up as much as 12 to 15 percent from a year earlier. Slaughter during the summer months may be up moderately with the largest increases expected during the fall, reflecting the seasonal pattern in farrowings. If this expansion materializes as expected, market hog prices would then likely continue their downward trend, perhaps averaging in the mid to upper \$40's during the summer, and further declining during the fall.

If the projected pattern of farrowings and subsequent hog slaughter develops, as now seems likely, total hog slaughter for 1976 may be up

around 3 to 5 percent from 1975 with hog prices moving generally lower through the year.

SHEEP AND LAMBS

Commercial sheep and lamb slaughter in 1975 will likely total about 8 million head, down about 9–10 percent from 1974. The reduction in slaughter this year basically parallels the 11 percent reduction in the sheep and lamb inventory at the beginning of 1975. Average live weights of sheep and lambs slaughtered are down about 2 percent this year, reflecting the smaller number of lambs fed.

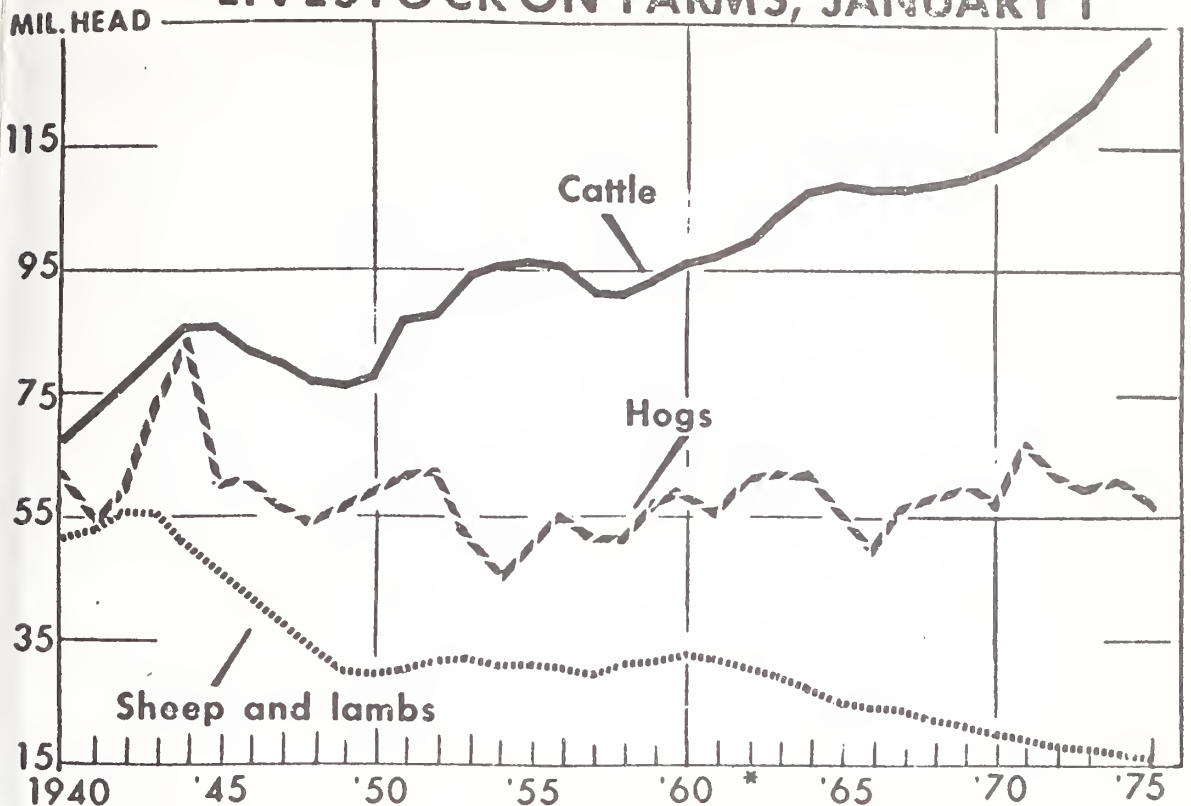
The January 1, 1976, inventory of sheep and lambs probably will continue down, as it has each year since 1960. Considering expected slaughter in 1975, coupled with the 6 percent smaller 1975 lamb crop, the inventory at the beginning of next year may total around 13½ million head, down 6–8 percent from last January. The inventory of breeding ewes one year and older will likely show a similar decline, reducing the 1976 lamb crop by another 6–8 percent. This points to another 5–10 percent reduction in sheep and lamb slaughter for 1976, barring any more liquidation than now seems likely. Prices through next year will likely continue strong, and Choice slaughter lambs match or exceed 1975's record level of about \$43 per 100 pounds. Normal seasonal price trends appear likely, with prices rising into late winter or earlier spring, then dropping back and stabilizing in the the last half of the year. With reduced feed costs in the upcoming year, feeder lamb prices could strengthen relative to fed lamb prices.

MEAT CONSUMPTION

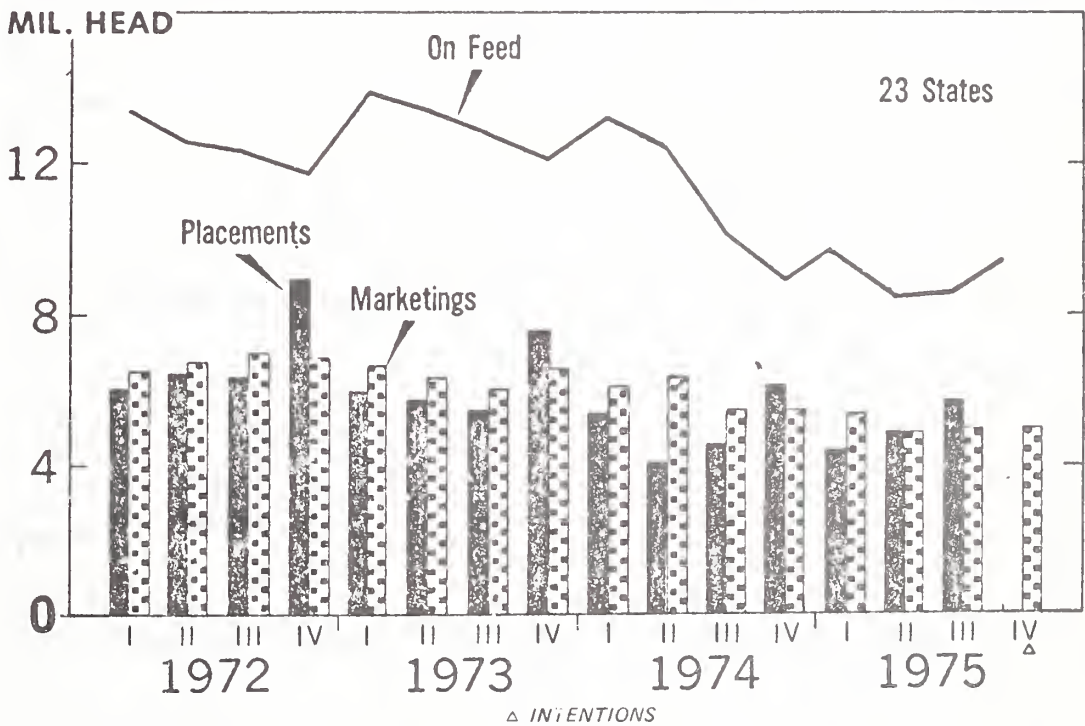
Per capita meat consumption in 1975 is expected to total about 180 pounds per person, down about 4 percent from 1974's 188 pounds. Beef consumption may total a record 120 pounds, up 3 pounds from last year, and veal consumption at 4 pounds is almost double 1974's level. Declines in lamb and pork consumption, however, have been more than offsetting. Lamb and mutton consumption will total about 2 pounds, down slightly from 1974; but pork consumption will be off about 12 pounds from 1974 and total around 54 pounds per person, the smallest in 40 years. The Bureau of Labor statistics index of retail meat prices this year will be record high, perhaps averaging 7–9 percent above 1974. Despite sharp increases during the year, beef and veal prices will average little if any higher than 1974, while pork prices average over 20 percent higher.

Increases in retail meat prices in 1976 may be moderated by expected increases in red meat supplies. Barring any unusual developments in the grain market, and assuming another good feed grain crop in 1976, it now looks as if per capita meat consumption could total around 185 pounds per person, up 5 pounds from 1975 but still short of 1974. If cattle feeding picks up as expected, beef consumption next year could grow to a record 122–124 pounds per person, with all the increase in fed beef supplies. Pork consumption will likely recover some but remain relatively low at 56–58 pounds per person. Increased pork consumption in the last half of 1976 will likely offset reductions in the first half.

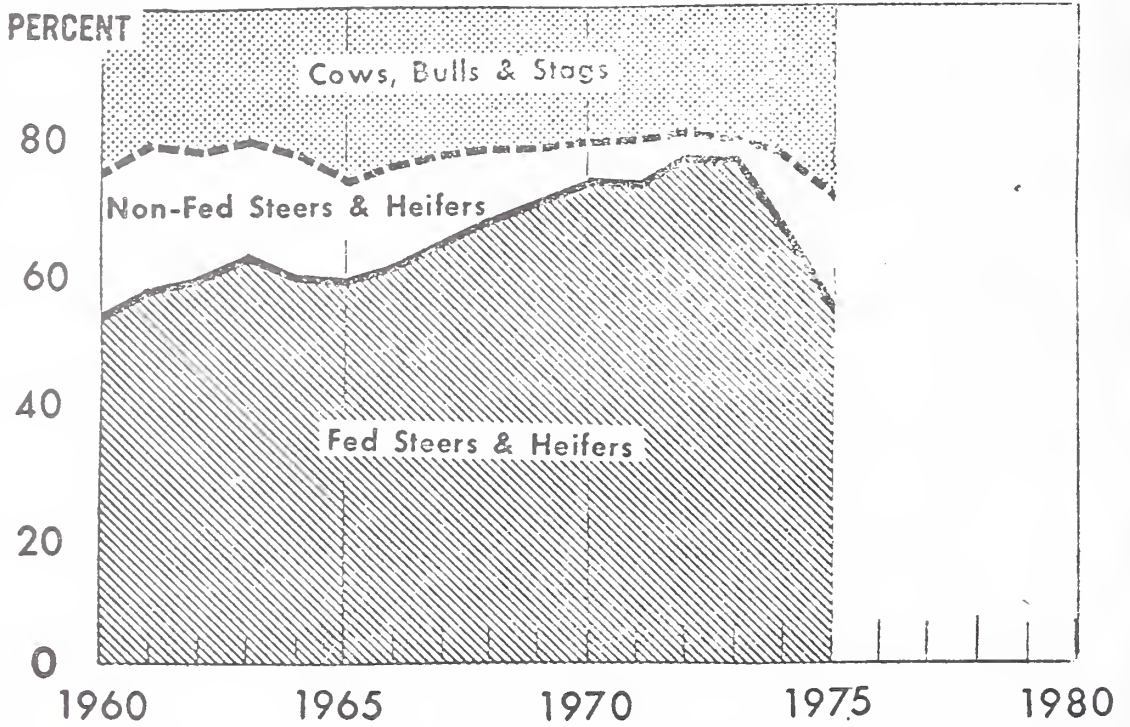
LIVESTOCK ON FARMS, JANUARY 1



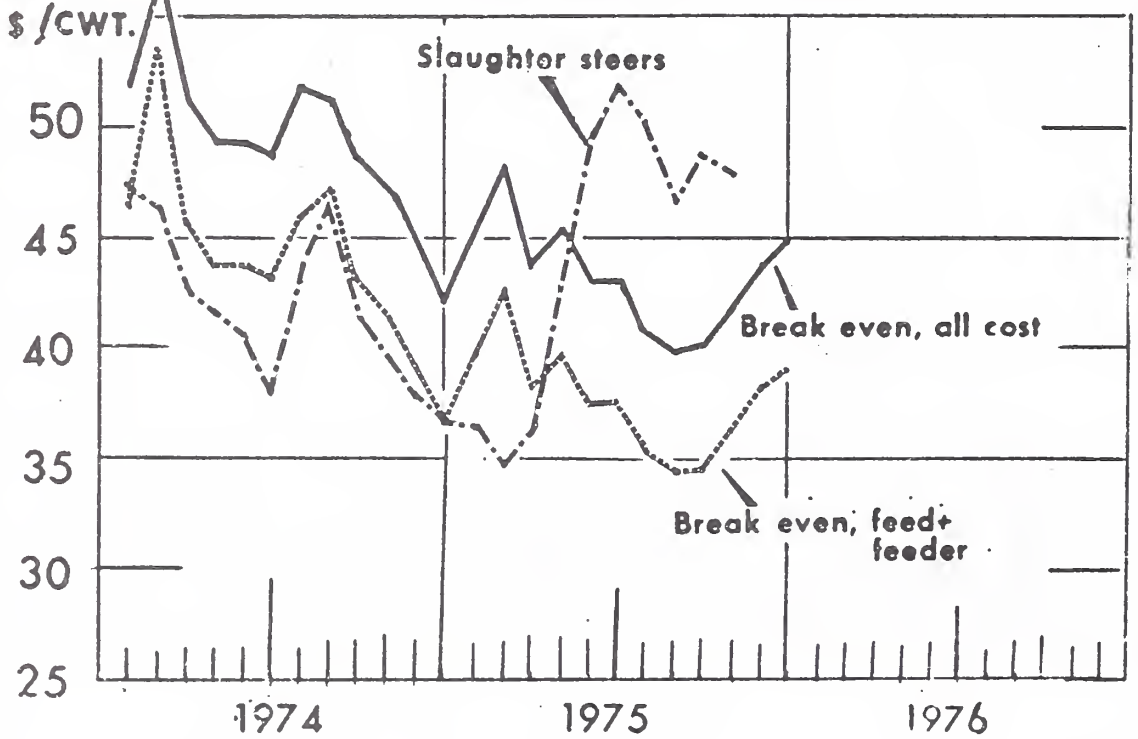
CATTLE ON FEED, PLACEMENTS AND MARKETINGS



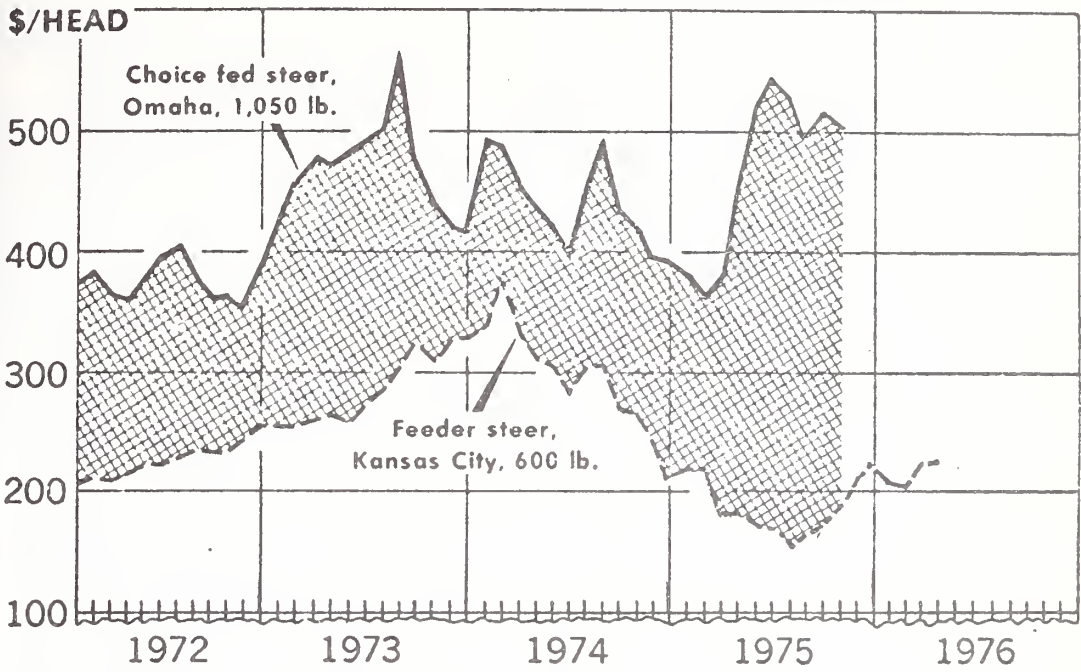
CATTLE SLAUGHTER



FED CATTLE PRICES AND COSTS



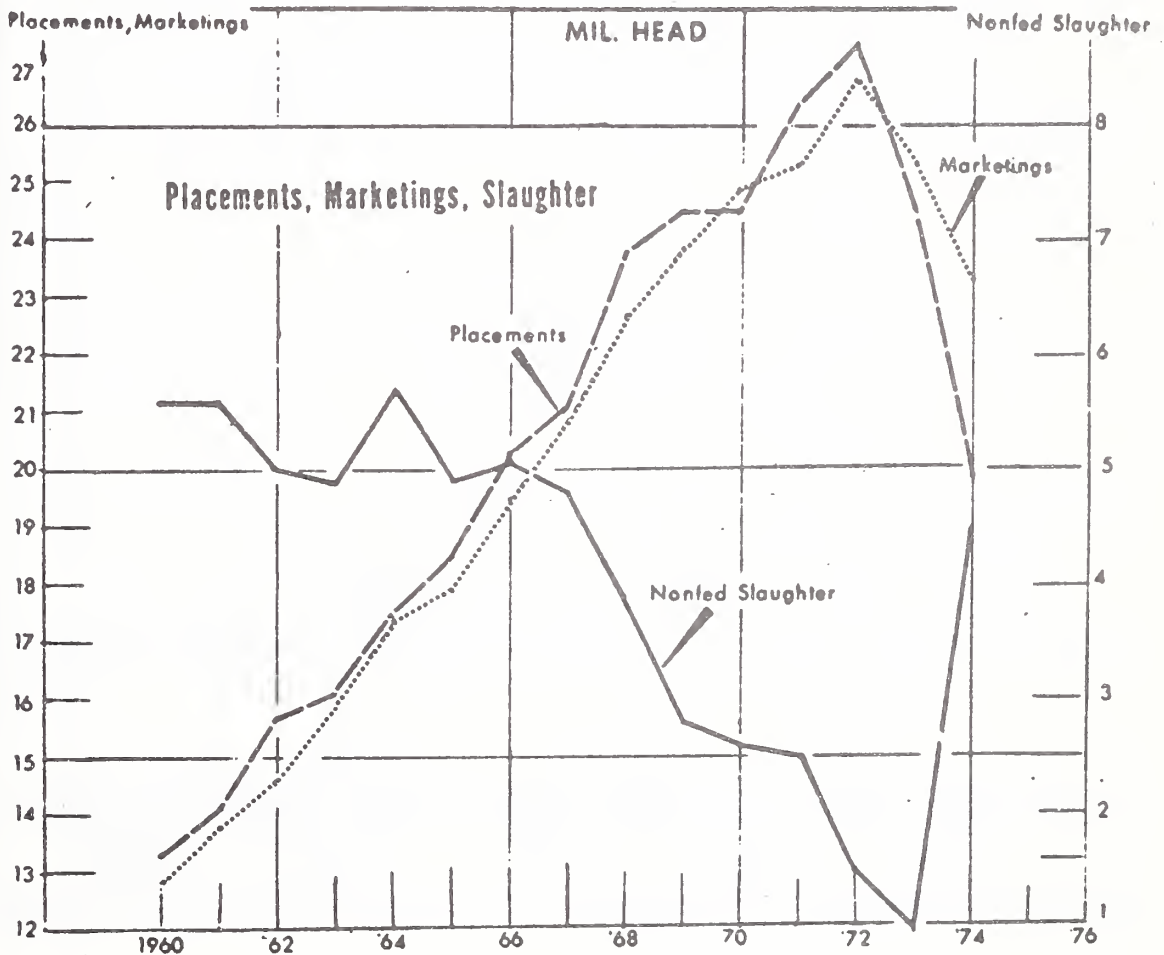
GROSS CATTLE FEEDING MARGINS *



* CURRENT FED CATTLE PRICES PER STEER COMPARED WITH FEEDER CATTLE PRICES
6 MONTHS EARLIER.

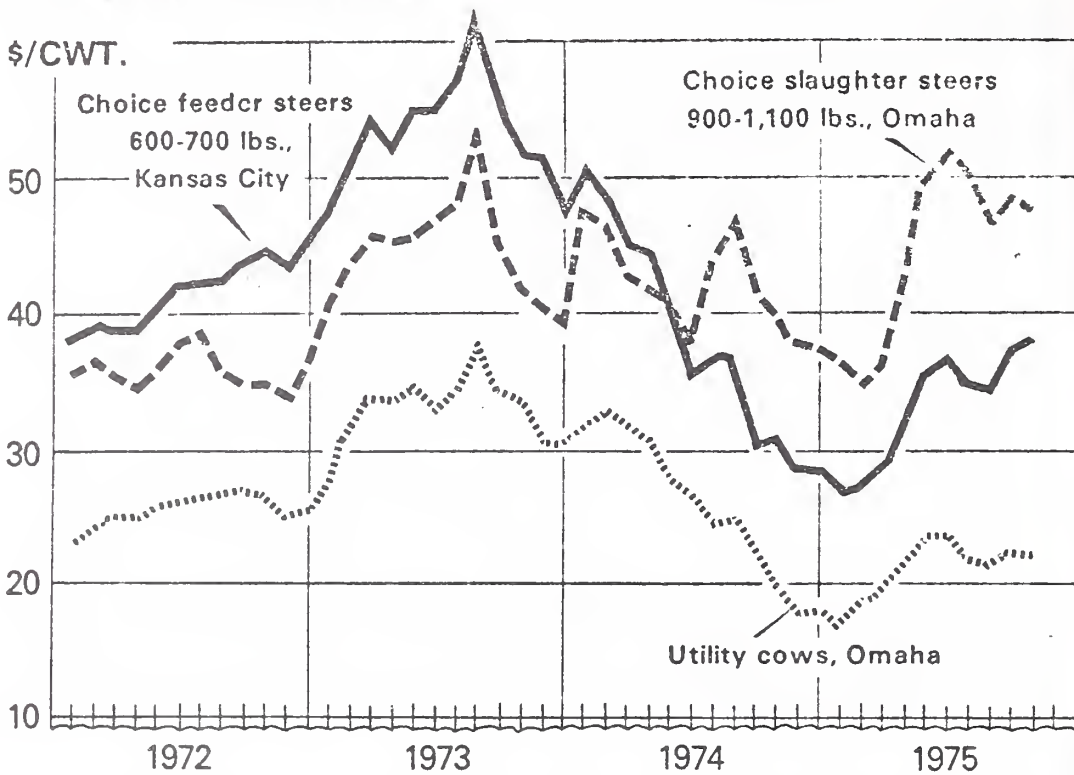
USDA

NEG. ERS 641 - 75



CATTLE PRICES

\$/CWT.

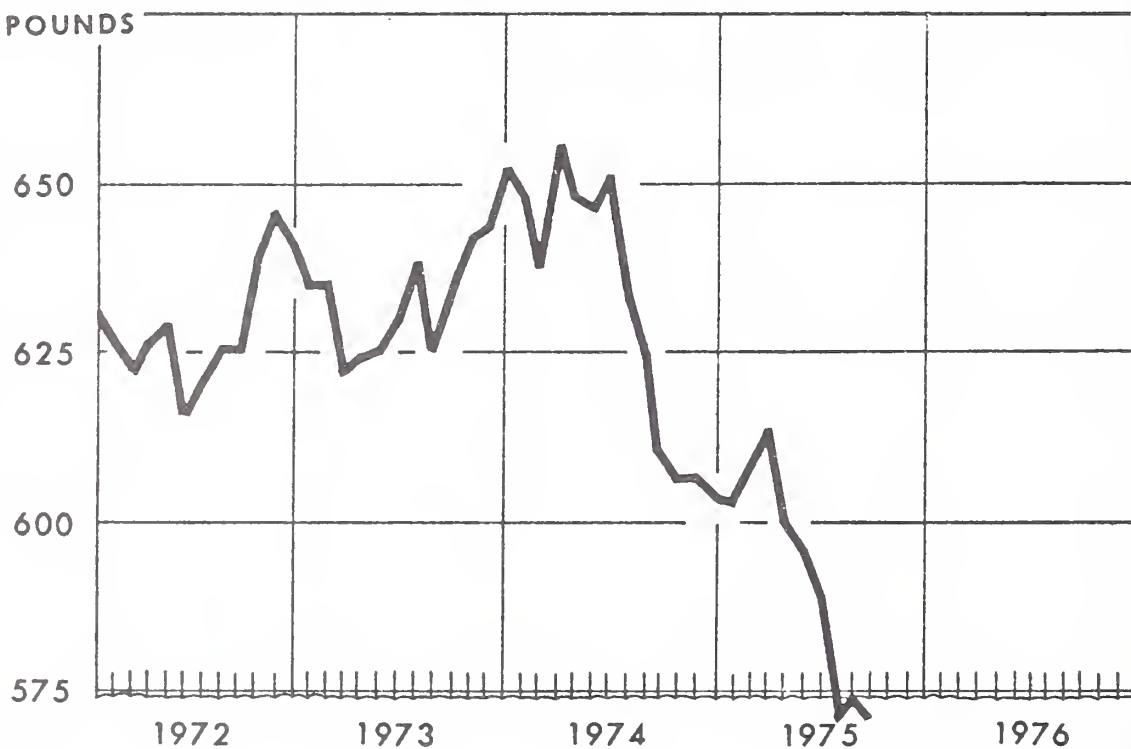


USDA

NEG. ERS 951-

AVERAGE DRESSED WEIGHT OF CATTLE

POUNDS

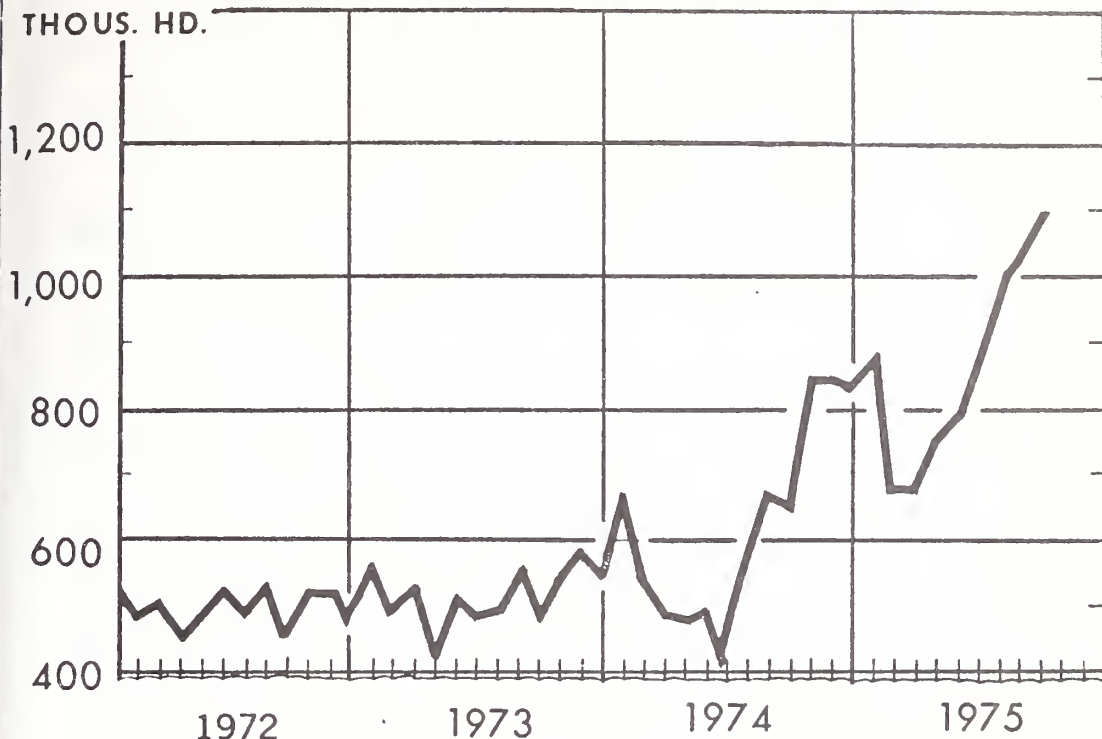


USDA

NEG. ERS 2126-

COMMERCIAL COW SLAUGHTER*

THOUS. HD.



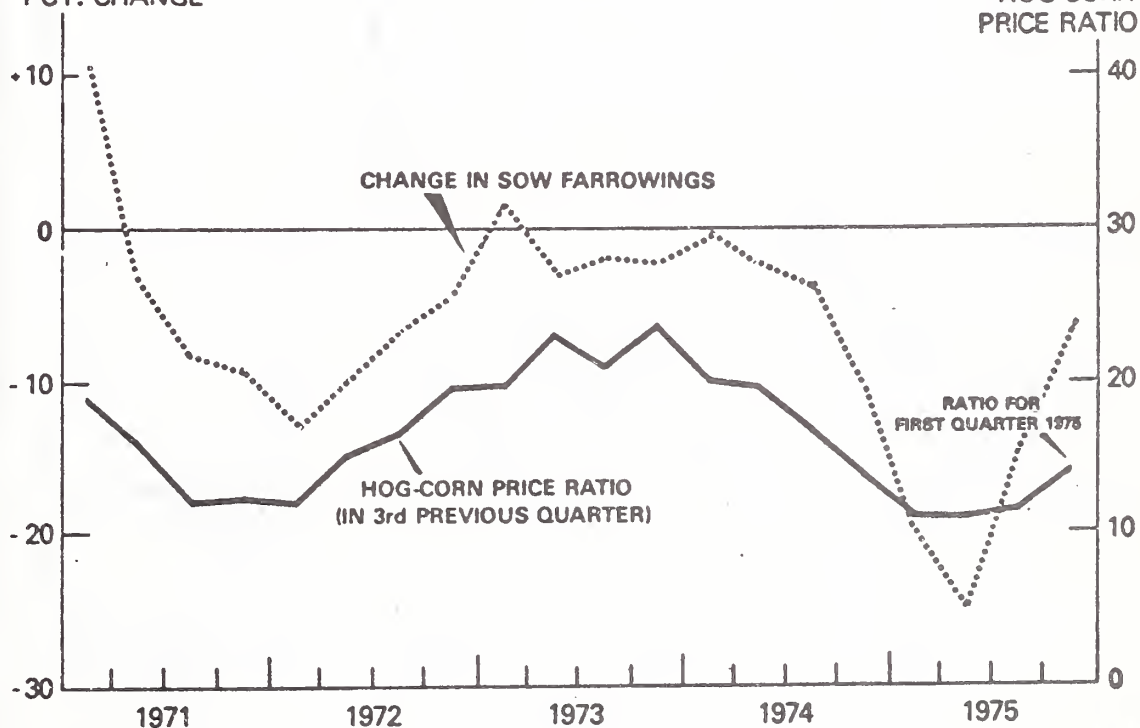
USDA

* ESTIMATED

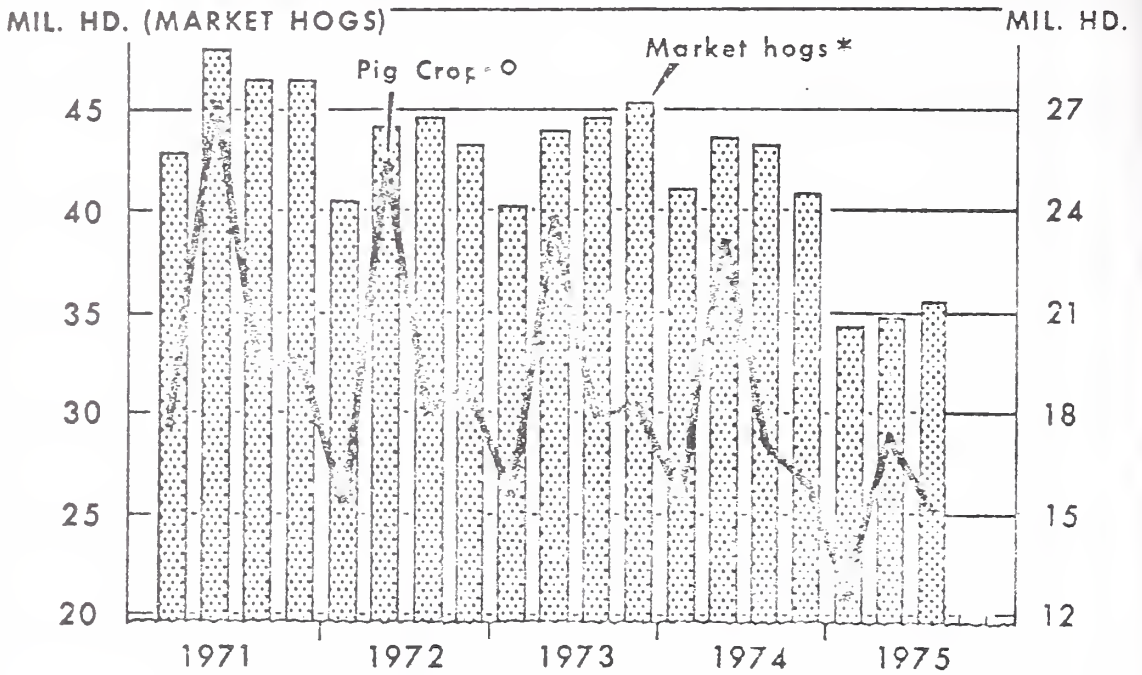
NEG ERS 940-

SOW FARROWINGS — HOG-CORN PRICE RATIO

PCT. CHANGE

HOG-CORN
PRICE RATIO

MARKET HOGS AND PIG CROPS, 14 STATES

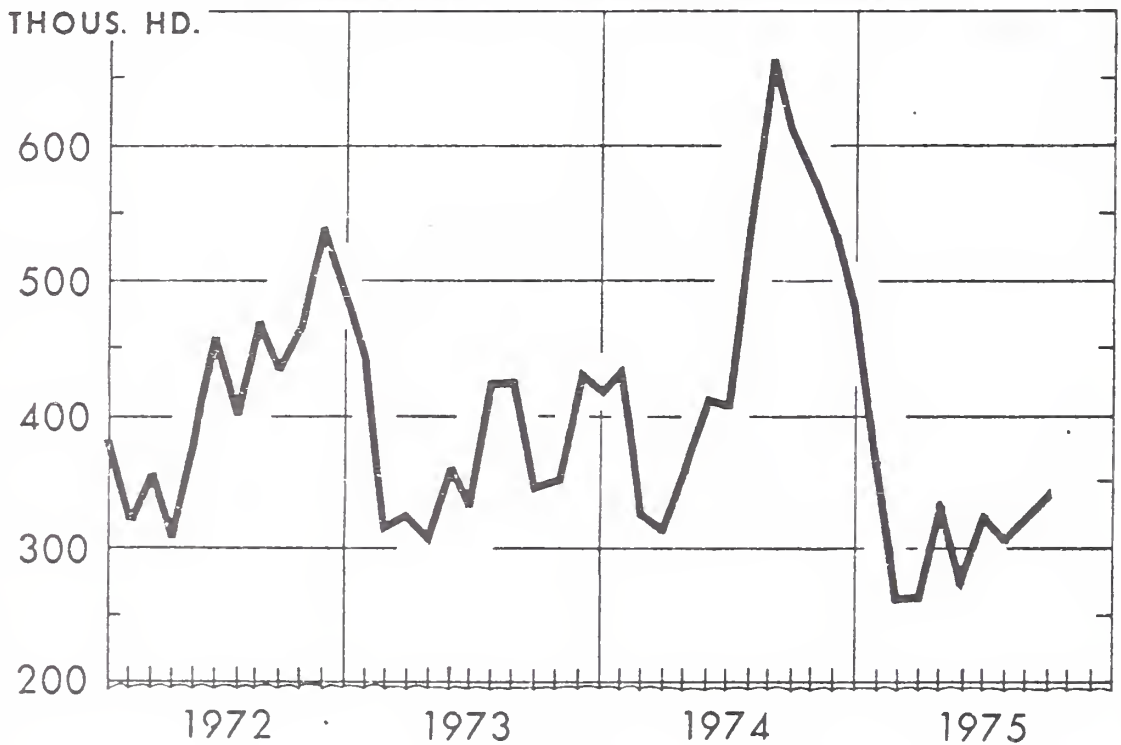


* MARKET HOGS ON FARMS, MARCH 1, JUNE 1, SEPT. 1 AND DECEMBER 1.
 O PIG CROPS DECEMBER - FEBRUARY; MARCH - MAY; JUNE - AUGUST; SEPTEMBER - NOVEMBER.

USDA

NEG. EPS 2125-75 (10)

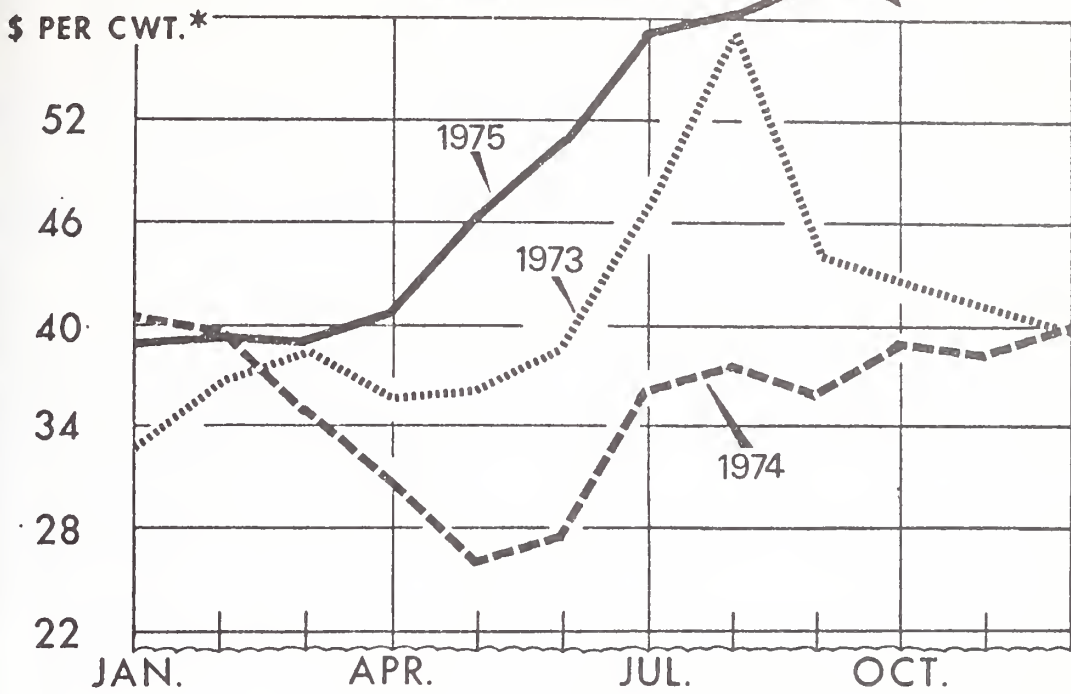
COMMERCIAL SOW SLAUGHTER*



*ESTIMATED.

USDA

NEG. ERS 941-

HOG PRICES

* BARROWS AND GILTS AT 7 MARKETS.

OUTLOOK FOR POULTRY AND EGGS

[By William E. Cathcart, Commodity Economics Division, Economic Research Service, USDA]

The passing of a year has seen poultry producers go from a highly pessimistic attitude to a guarded but generally optimistic one. A year ago producers had already experienced a period of a severe cost price squeeze and were faced with bleak prospects going into 1975. However, conditions are much more favorable today. There has been some recovery in the general economy, prices of competing meats are higher, and production costs are below a year earlier. Egg producers are currently in better shape than a year ago, but the continued decline in egg consumption has cast a shadow on prospects for 1976.

UPTURN IN THE GENERAL ECONOMY

The outlook for the general economy is much improved from a year ago. Gains in per capita disposable incomes in recent months have been greater than the rise in the costs of commodities and services resulting in increased purchasing power for consumers. And real per capita disposable income is expected to continue to rise in 1976. Improvement in the general economy should lead to a continued slow drop in the rate of unemployment. These two factors, rising consumer incomes and easing unemployment, will contribute to stronger demand for poultry in 1976.

BEEF SUPPLIES UP, PORK DOWN

Larger beef output through September this year compared with a year earlier was more than offset by sharply lower pork output. Prospects for the first half of 1976 are for beef and pork output combined to be 2-3 percent below year-earlier levels. Beef output is expected to continue larger than a year earlier but by a decreasing margin. Pork production likely will be increasing but remain below 1975 levels.

PRODUCTION COSTS LOWER

The cost of producing poultry and eggs has trended lower during the past year as a result of lower feed prices. Prices of broiler and turkey feed and egg laying feed in mid-October was about 11 percent below October 1974. Whereas feed costs have eased, the costs of most other items of production are higher than a year ago. The index of interest paid by farmers rose from 222 (1967=100) in October 1974 to 263 in October 1975; the index of taxes paid went from 150 to 156; and the index of farm wage rates increased from 185 to 189.

Based on our estimates, production costs for poultry and eggs were below year-earlier levels in October. The cost of producing 1 pound of liveweight broiler declined from about 24 cents in October 1974 to 22

cents in October 1975; the cost of producing turkey fell from around 32 to 30 cents a pound liveweight; and the cost of producing 1 dozen loose Grade A large eggs dropped from nearly 48 cents to 44 cents. (For a discussion of the method used to estimate production costs see the March 1975 issue of the *Poultry and Egg Situation*.)

Production costs in coming months likely will average below year-earlier levels because of expected larger supplies and lower prices of most feed ingredients. However, stronger than expected export demand for feed grains (primarily corn) and soybeans likely would lead to higher feed prices and could drive the cost of production back up to near year-earlier levels.

Feed grain supplies (corn, grain sorghum, oats, and barley) for the 1975/76 marketing year were estimated as of October 1 to total 219 million short tons, 17 percent above 1974/75 but still well below other recent years. The expected 23 percent increase in feed grain output would offset the smaller carryover at the beginning of the year and provide for larger domestic feeding, record large exports, and some recovery in carry-over stocks by the end of 1975/76. As a result, feed grain prices in 1975/76 likely will average somewhat below 1974/75. Corn prices at the farm may average between \$2.50 and \$3.00 a bushel, compared with about \$3 in 1974/75.

High protein feed supplies also will be more plentiful in 1975/76. The second largest soybean crop on record and large carry-in stocks could lead to soybean meal supplies for 1975/76 being up more than a million tons to around 18½ million tons. However, domestic use is expected to rise to around 13½ million tons, up about a million, as feeding picks up in response to improved profitability of livestock and poultry production. Exports may be up some from 1974/75's 4.5 million tons but fall well short of the 5.5 million tons shipped in 1973/74. Soybean meal prices (44 percent protein, Decatur) in 1975/76 may average near the \$130 a ton level of 1974/75.

Eggs

This year has been a disappointing year for egg producers. High feed prices caused producers to cut back their production substantially in late 1974 and during the first half of 1975. However, the production cuts did not generate as much price strength as expected and many producers lost money during late winter and spring this year. Although a poor financial situation existed for most producers this spring, the expectation of declining feed prices and improved egg prices later in the year caused producers to be optimistic. Egg producers choose to keep their old layers longer by force molting them instead of culling for slaughter.

From April through September an average of almost 19 percent of the hens and pullets of laying age has been force molted or were in the process of being molted. This compares with 12.5 percent in 1974 and 11.5 percent in 1973. The increase in the number of layers force molted has resulted in a substantial reduction in the number of mature chickens slaughtered. A total of 13 million fewer mature chickens were inspected for slaughter in federally inspected plants during April–September this year than in the same months of 1974.

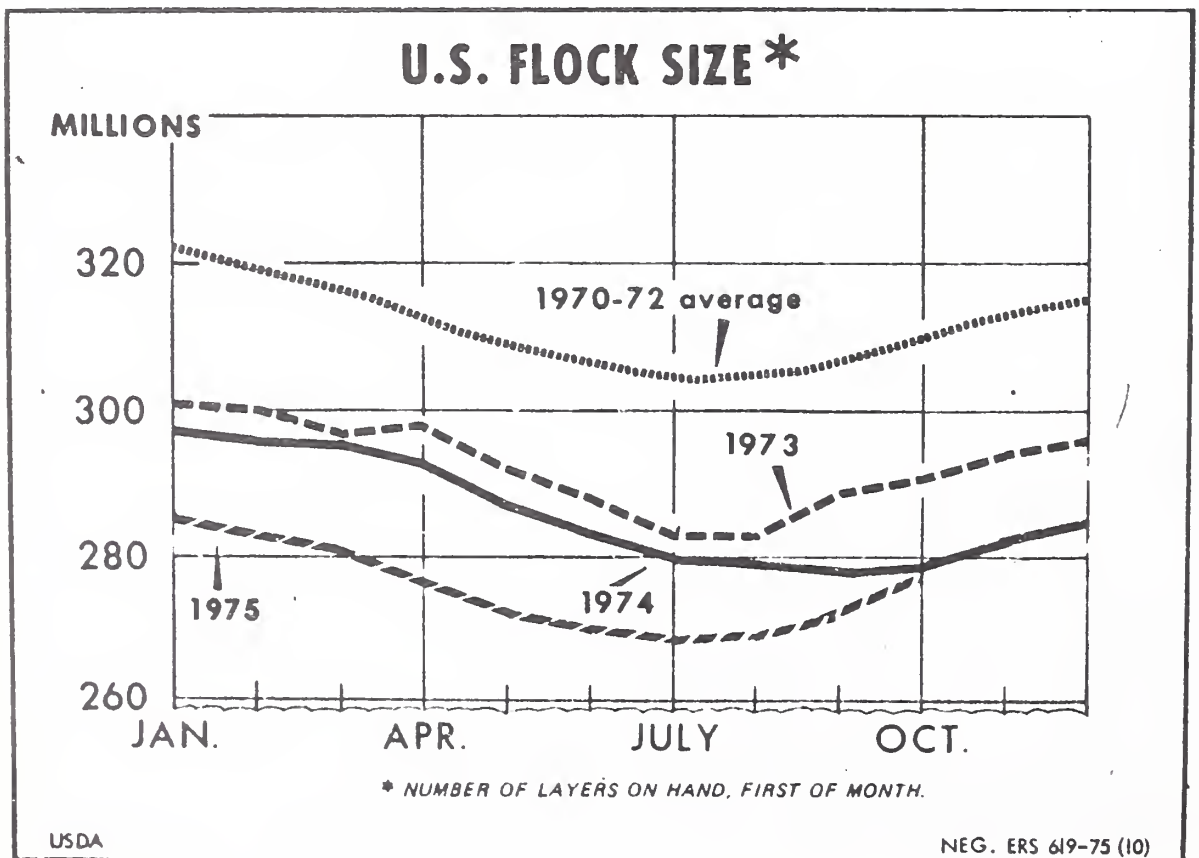
The practice of producers keeping old layers longer has resulted in a gradual gain in layer numbers over year-earlier levels since early

spring. In April, layer numbers were lagging 1974 by around 15 million birds, but by October 1 there were only about 2 million fewer.

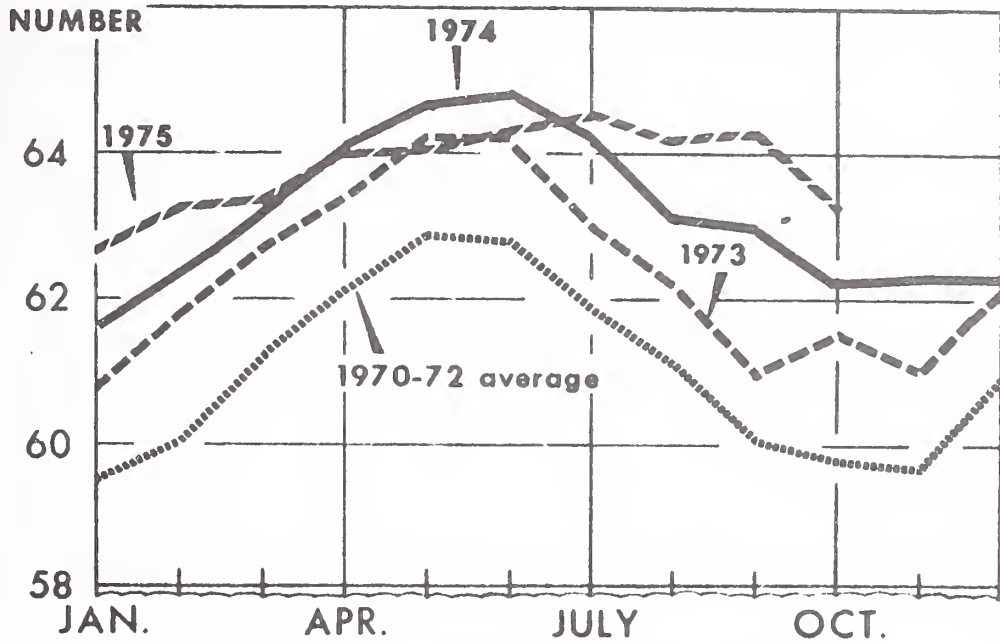
Egg production has gained faster than layer numbers because of advances in the rate of lay. During July–September the rate of lay averaged 1.6 percent above the same months in 1974. The increased rate of lay occurred even though there was an average of about 6 percent more forced molted layers during July–September than a year earlier. The gain in layer numbers plus the increased rate of lay resulted in September's output being almost 1 percent above last September. This was the first time output has exceeded the same month a year earlier since March 1974.

The rate of lay probably will continue higher this fall. Depending on layer numbers, egg production this fall could be equal to or as much as 2 percent above October–December 1974. The hatch of egg-type chicks 5–6 months previous indicates the number of young pullets entering the laying flocks will not surpass 1974 levels until this December. Thus, the number of old layers culled from the flocks will determine whether layer numbers will exceed a year ago this fall. If producers continue to keep their old layers longer, then layer numbers will probably exceed 1974 levels. However, the current sluggish egg prices could result in producers increasing their culling of old layers. Weekly reports indicate more mature hens went through federally inspected plants in October than a year earlier.

Egg output may be up around 2 percent in the first quarter of 1976, but could drop back to near year-earlier levels in the spring. There will be a few more young pullets entering the flock during January–March, but the number entering next spring will likely drop below this year's levels. Large numbers of old layers were force molted during the spring of 1975, and many of these probably will be taken out next spring following the usual seasonal price decline after Easter.



RATE OF LAY *

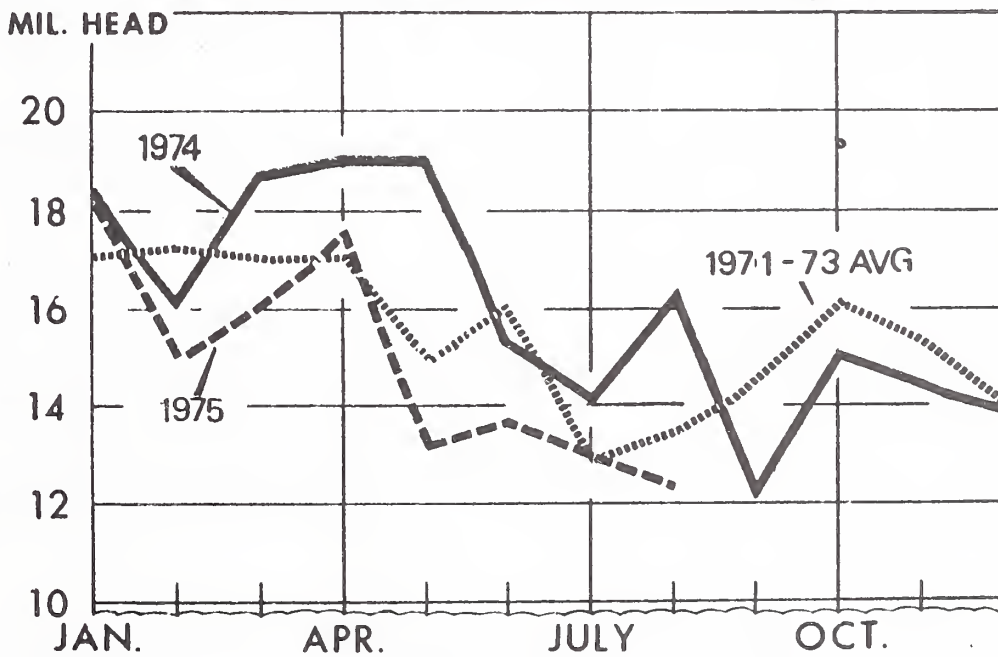


* EGGS PER 100 LAYERS, FIRST OF MONTH.

USDA

NEG. ERS 620-75 (10)

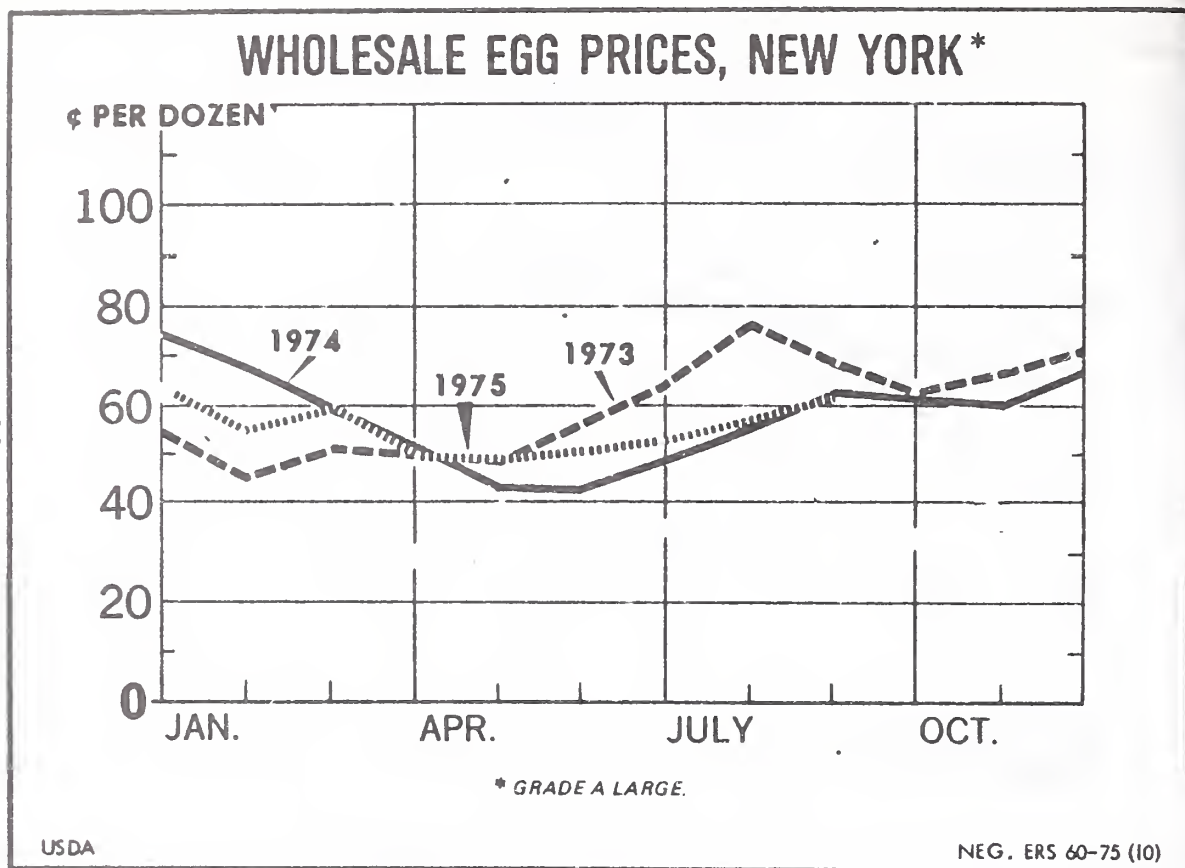
MATURE CHICKEN SLAUGHTER *



* FOWL FROM BREEDER AND MARKET EGG FLOCKS.

USDA

NEG. ERS 621-75 (10)



Alternatively, a deterioration in the relationship between feed and egg prices in late 1975 and early 1976 from what is currently expected would probably cause producers to cull more of their old layers earlier. This would mean lower production during late 1975 and the first half of 1976. Also, fewer pullets would be hatched for flock replacement later in 1976.

On the other hand, if the relationship between feed and egg price is better than expected, larger production would likely result. More pullets would probably be hatched for second half 1976 flock replacements. This could spell trouble for egg producers later in 1976 as egg output rose moderately.

Consumption of eggs this year continued its slide of the last few years. Per capita consumption for 1975 is expected to total 8-10 eggs below the 287 eggs in 1974. This would be a drop of 35-37 eggs per person since 1971 and over 55 eggs since 1960. This year there will be a drop in the use of both shell eggs and processed eggs. In 1974, all of the decline was in shell eggs as processed egg use increased.

EGG PRICES SLUGGISH

The apparent sluggish demand for eggs and consumer resistance to high retail egg prices have prevented egg prices this year from advancing as earlier expected. Through September production was about 3 percent below a year earlier, but egg prices (New York wholesale, Grade A large white) averaged about 2 percent below a year earlier.

As production increased, egg prices in late summer and early fall drifted lower. New York large egg prices averaged around 57 cents

a dozen in October, 5 cents below October 1974. Prices probably will remain weak during the remainder of 1975 and average around 5 percent below the 63 cents a dozen average in October–December 1974. Unless consumer demand for eggs picks up more than now expected, the expected larger production in early 1976 could result in egg prices being near or below year-earlier levels during the first half of 1976.

One of the factors that has contributed to the weak shell egg prices this year has been the reduced demand for egg products. High sugar and oil prices last fall resulted in a drop in breaking activity and the drop has continued throughout this year. From January to mid-September a total of 13.2 million cases of shell egg were broken, 15 percent below the comparable period in 1974. Production of egg products totaled 481 million pounds, down 77 million pounds from a year earlier. Dried egg production was down 27 percent to 389 million pounds, while production of frozen eggs declined 20 percent to 219 million pounds. Production of liquid egg products for immediate consumption increased 22 percent to 123 million pounds. However, liquid egg production for further processing dropped 24 percent to 100 million pounds.

There probably will not be any significant pickup in breaking activity in coming months. It is questionable whether egg product use will ever get back to the level attained in 1974. There have been several egg product substitutes introduced in the past couple of years and these substitutes are making inroads into the traditional markets for natural egg products.

Hatching egg use was well below a year earlier in early 1975, but these declines have been offset by the jump in broiler-type egg sets in recent months. Through August it is estimated that 8.6 million cases of eggs were used for hatching purposes, about equal to the same months last year. Hatching egg use in coming months will be substantially above the reduced late 1974 and early 1975 levels.

BROILERS

Output of broiler meat in federally inspected plants this year may slightly exceed 1974's output of 7,918 million pounds. Production through September was down 2 percent but this will be more than offset by the increased output during the balance of 1975. Weekly chick placement and eggs set in recent weeks indicate October–December marketings will be around 12 percent above a year ago.

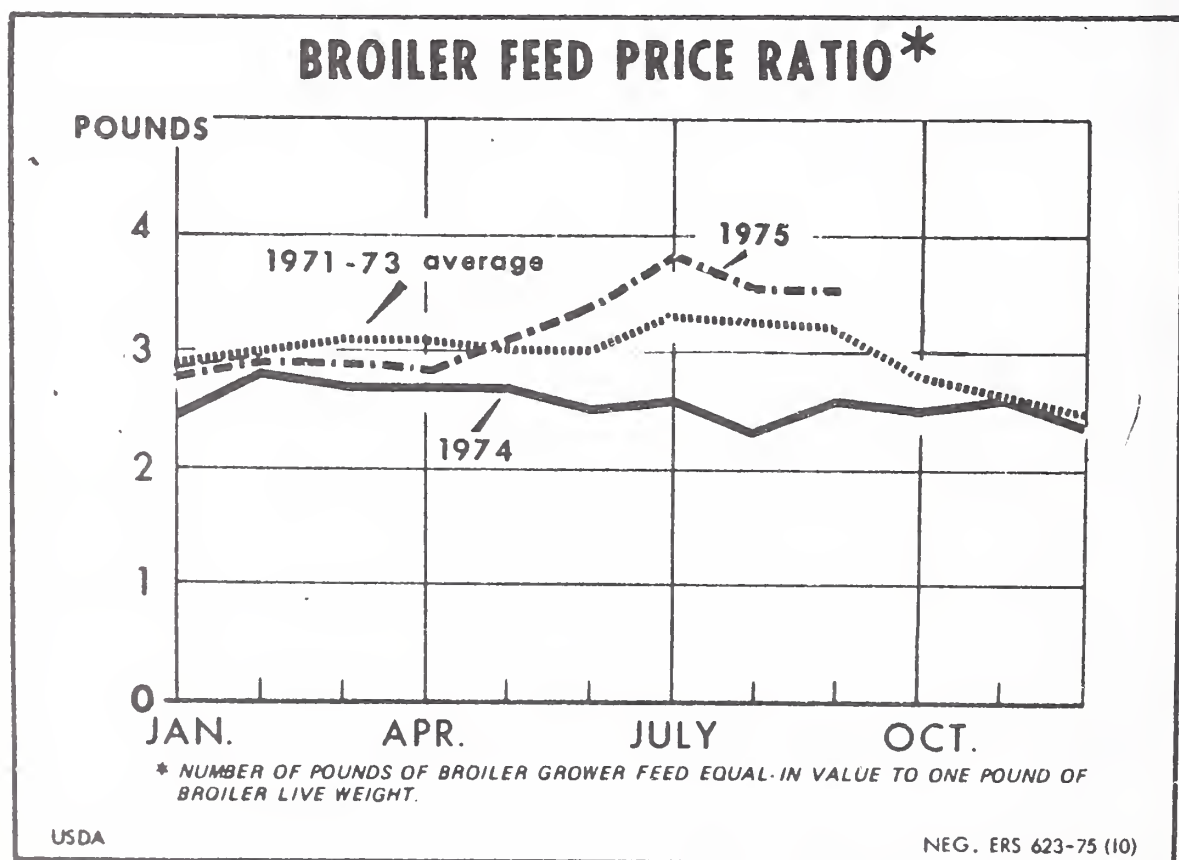
Although broiler production costs during July–September this year were not much different than in 1974, broiler prices in the 9-city markets averaged nearly 13 cents a pound higher. This was probably the most profitable 3 months ever experienced by broiler producers and provided the necessary incentive for producers to hold first half 1976 output well above the same period of 1975. The broiler-feed price ratio in October was 3.5, down slightly from September but well above the 2.5 in October 1974. The improved profitability in recent months has also caused producers to increase pullet check placements for the broiler hatchery supply flock.

Poor profitability in the broiler industry in 1974 caused broiler producers to reduce the number of pullet check placements for the broiler

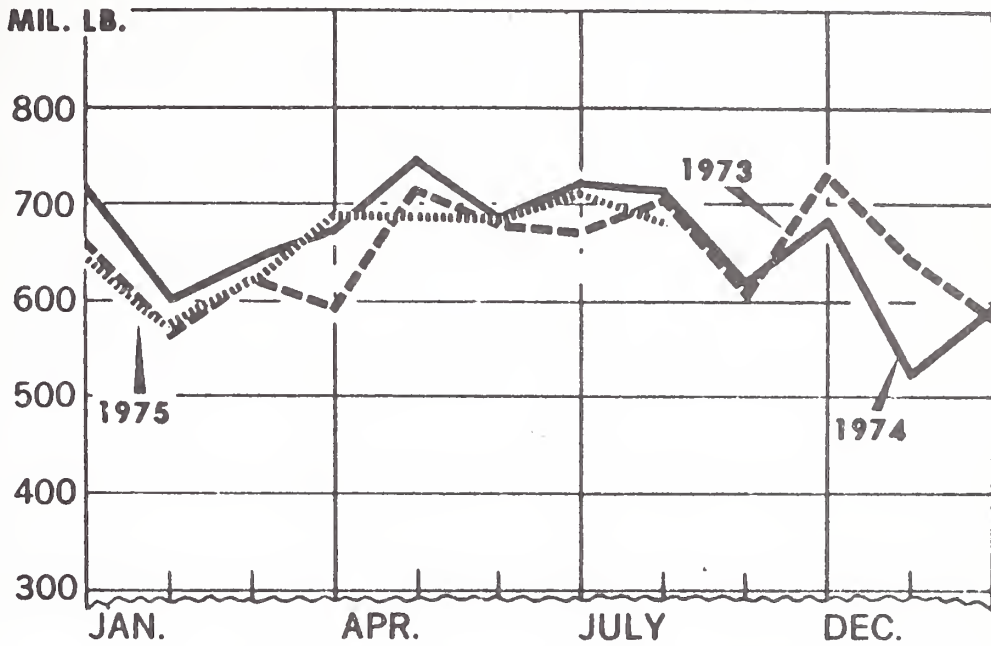
hatchery supply flock to well below the prior year's level. Based on pullets placed 8-14 months earlier, the number of layers in the hatchery supply flock has lagged a year earlier throughout 1975 and was down 13 percent in September. The accumulation of pullets placed will remain 11-12 percent lower in November, but the difference will narrow to only 9 percent below in December and be down only 4-5 percent in the first quarter of 1976.

In July-September placements of pullets in the hatchery supply flock rose to well above a year earlier but these placements will not provide eggs for hatching use until next spring. Despite the indicated reduction in the hatchery supply flock, the number of eggs set during September-October was nearly 13 percent above the same weeks of 1974. Apparently, comparisons of this year's indicated hatchery supply flock with a year earlier is misleading. The flock is more productive this year and some eggs were placed in incubators that would not have been used under more normal circumstances. Also layers are being held in the flock longer than in previous years. This is indicated by the reduced number of breeder-type mature hens slaughtered through federally inspected plants. The flock likely was underutilized during much of the second half of 1974 when sharp cutbacks in production were occurring.

Despite a smaller indicated flock in coming months, we believe there will be enough eggs available to produce around 10 percent more broilers during the first half of 1976. However, this might be about the upper limit on production for this period. Even if feed prices should increase moderately during the next few months, we think broiler production would still show a substantial increase from a year earlier during the first half of 1976.



BROILER SLAUGHTER *

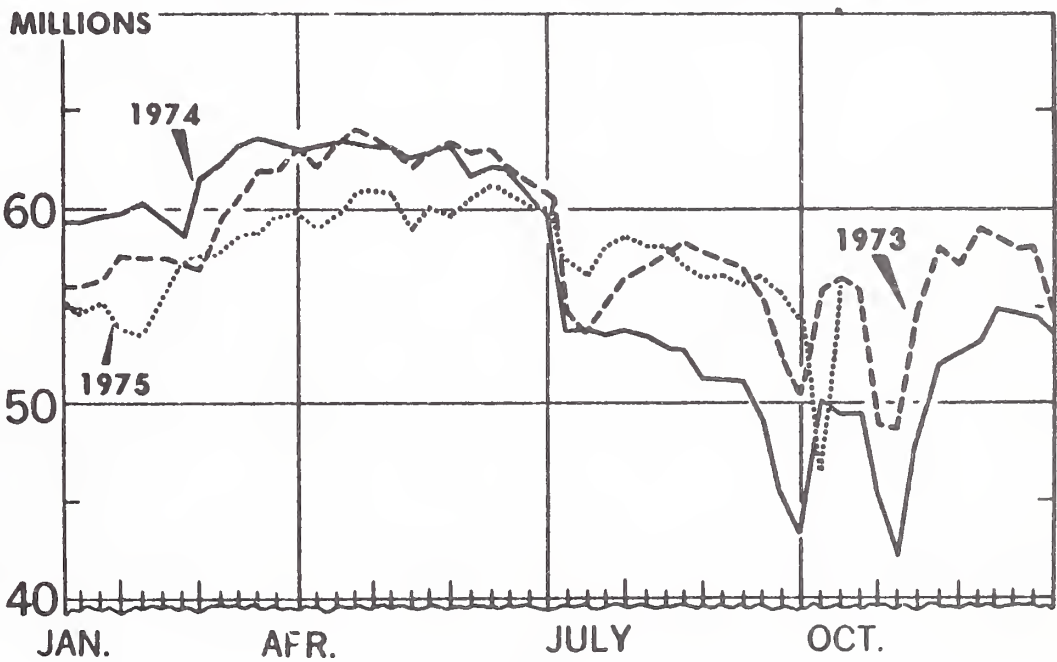


* CERTIFIED READY-TO-COOK, UNDER FEDERAL INSPECTION.

USDA

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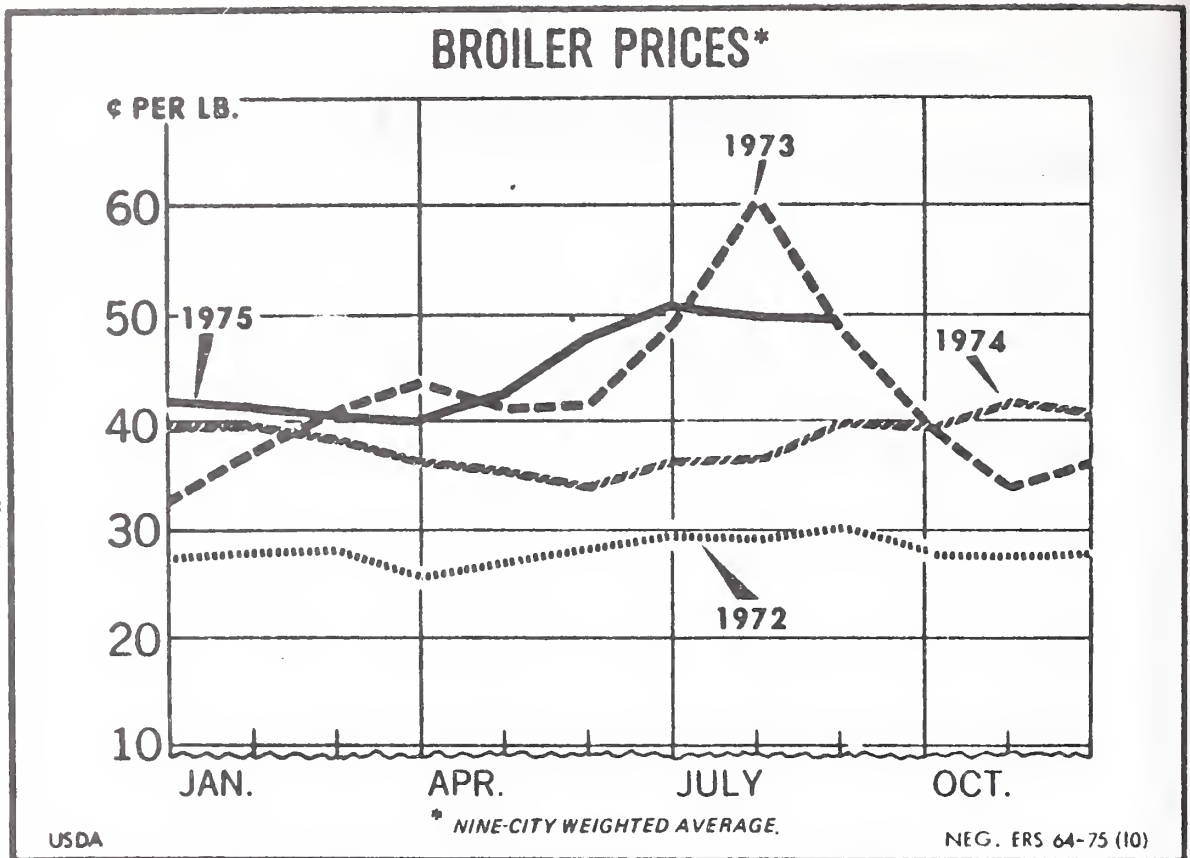
WEEKLY BROILER CHICK PLACEMENTS *



* 21 STATES

USDA

NEG. ERS 8223-75 (10)



Broiler prices rose more than usual in late spring and early summer as output lagged the previous year and red meat production sagged. Rapidly rising cattle and hog price during this period contributed to the sharp increase in the demand for broilers. The 9-city average wholesale price for broilers rose to 54 cents a pound for the first week of July, more than 16 cents above the same week of 1974. Prices subsequently eased but continued to fluctuate in the mid to high 40 cents a pound range through October.

Broiler prices normally decline in the fall and likely will ease further during November–December this year. However, fall and winter prices are expected to average near the mid-40's. The effect of larger broiler supplies during the first half of 1976 should be more than offset by small red meat supplies and higher consumer incomes.

Exports of chicken in 1975 are well above 1974 and other recent years. Whole young chicken and chicken parts during January–August totaled 89 million pounds, compared with 82 million for the same months of 1974. This was the largest export total for this period since the 133 million pounds in 1962 when the European Community was just beginning. As in other recent years, most of 1975 exports went to non-European countries; whereas, in 1962 over 70 percent went to the Common Market countries. Chicken parts (excluding livers) accounted for 81 percent of the total this year. Shipments to U.S. territories during the first 8 months of 1975 totaled 82 million pounds, compared with 70 million for the like period of 1974.

Through October 22 USDA had contracted to purchase 12.5 million pounds of frozen cut-up chicken and 72,000 pounds of milk packed cut-up chicken at a cost of \$6.8 million. This compares with 13.2 million pounds and a cost of \$6.1 million to this date in 1974. However, purchases in 1974 were begun in July, while in 1975 the first purchases were made in September.

Chicken meat use in 1975 probably will be down around a half pound per person from the 41.1 pounds consumed in 1974. Consumption of young chicken (primarily broilers) is expected to total slightly below last year's 37.5 pounds per person. Consumption was down sharply during early 1975, but July–September use should about match a year earlier and October–December use likely will be up substantially from 1974. Consumption of other chicken in 1975 may only total about 3.3 pounds per person, compared with 3.6 pounds in 1974. Consumption in 1976 will rise moderately as broiler output increases.

TURKEYS

The 1975 turkey crop is estimated at 124 million birds, down 6 percent from 1974. Heavy breeds were down about 7 percent to 108 million, while light breeds dropped only around 1 percent to 15 million. The decrease reflects the 5 percent fewer poults hatched during September 1974–August 1975.

Turkey meat output for all of 1975 may be down 7–8 percent from 1974. Output in federally inspected plants during the seasonally light first half of the year was down around a fifth. There were 18 percent fewer turkeys marketed and the average weight of birds was down nearly 3 percent. Output gained and was down only 7 percent during July–September. Production will continue to rise seasonally this fall and likely will exceed a year ago by around 6 percent.

However, available turkey meat supplies during the balance of 1975 will be moderately below a year ago. Although fourth quarter output will exceed last year, the increase will not be large enough to offset reduced cold storage stocks. Stocks of turkey in cold storage on October 1 totaled 405 million pounds, 124 million below October 1, 1974. Although stocks have declined relative to 1974, the October 1 stocks were still 46 million pounds above the same date of 1973.

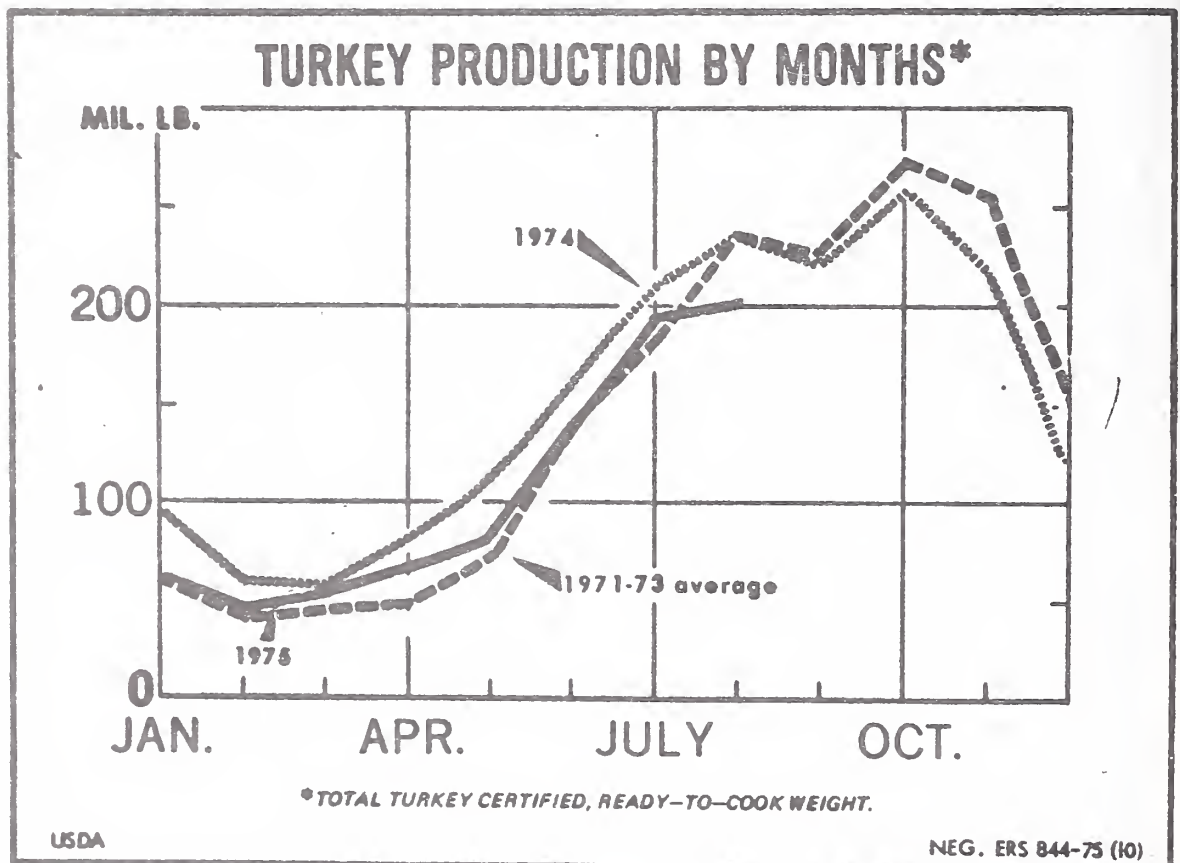
Turkey output in the first half of 1976, although seasonally small, likely will be substantially above the reduced first half of 1975. Turkey poults hatched during September were a whopping 39 percent above a year earlier. However, eggs in incubators on October 1 were only up 2 percent and weekly reports show turkey eggs placed in incubators in recent weeks have fallen below year-ago levels. The decline in eggs set in recent weeks likely is related to the availability of eggs in the off-season and to the price weakness in September. Apparently producers are taking a wait-and-see attitude. We look for a turnaround in poult production in coming weeks as turkey prices strengthen and profit margins increase. Poult production for marketing during the first half of 1976 may increase and average 15–20 percent above January–June 1975. This would about match the record levels for this period in 1974.

Turkey prices this year trended steadily upward from mid-February through August as turkey supplies lagged and prices of competing meats rose. Prices weakened in September as demand lagged, but subsequently have strengthened. New York wholesale prices for 8–16 pound young hen turkeys in late October averaged around 59 cents a pound, 7 cents above a year earlier. Some further seasonal price strength is likely with prices averaging in the low to mid-60 cents range during November–December. Prices likely will decline season-

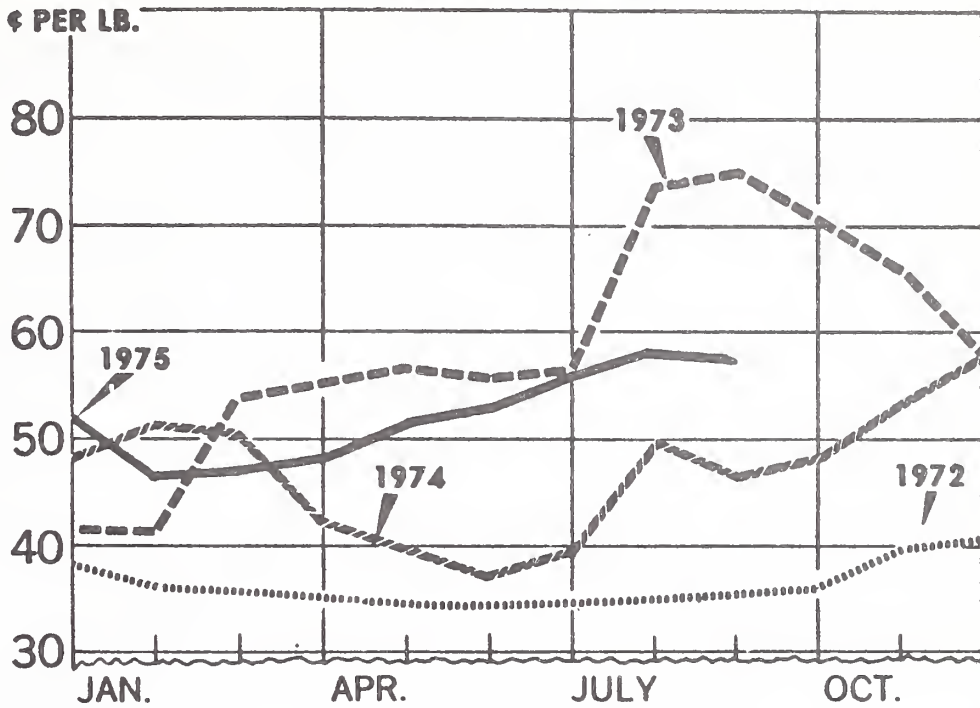
ally after the holidays, but stay above a year earlier into 1976 despite the expected increases in production. Prices will be bolstered by continued low pork production and reduced cold storage turkey stocks. Turkey stocks on January 1, 1976, may be down around 75-100 million pounds from the 275 million pounds on January 1, 1974.

Exports of turkey meat this year through August totaled 24.9 million pounds, down from the 26.8 million for the same months of 1974. Most of the decline occurred in the early months. July-August exports were well above a year earlier.

USDA resumed purchases of turkey meat in August for use in school lunches and also for the elderly feeding programs. Purchases through October 22 totaled 19.2 million pounds of ready-to-cook whole turkey, and 140,000 pounds of bulk packed turkey at a total cost of \$11.1 million. With the October 22 purchases, USDA said no further purchases would be made because program needs had been filled. This is well below the 53.6 million pounds purchased in 1974 when purchases were begun in July and continued through the balance of the year.



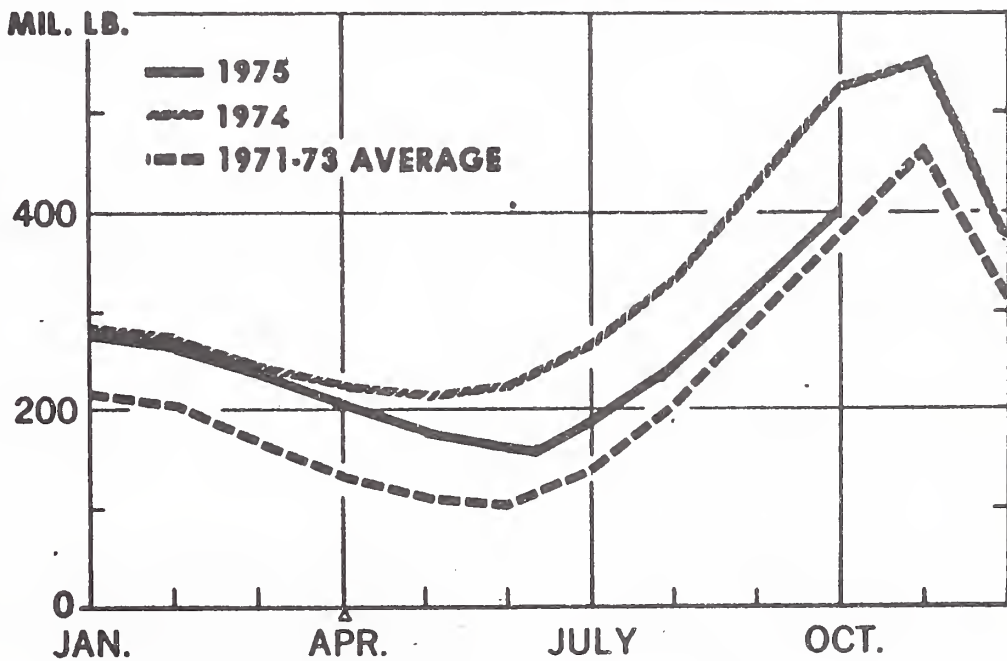
TURKEY PRICES*



USDA

NEG. ERS 67-75 (10)

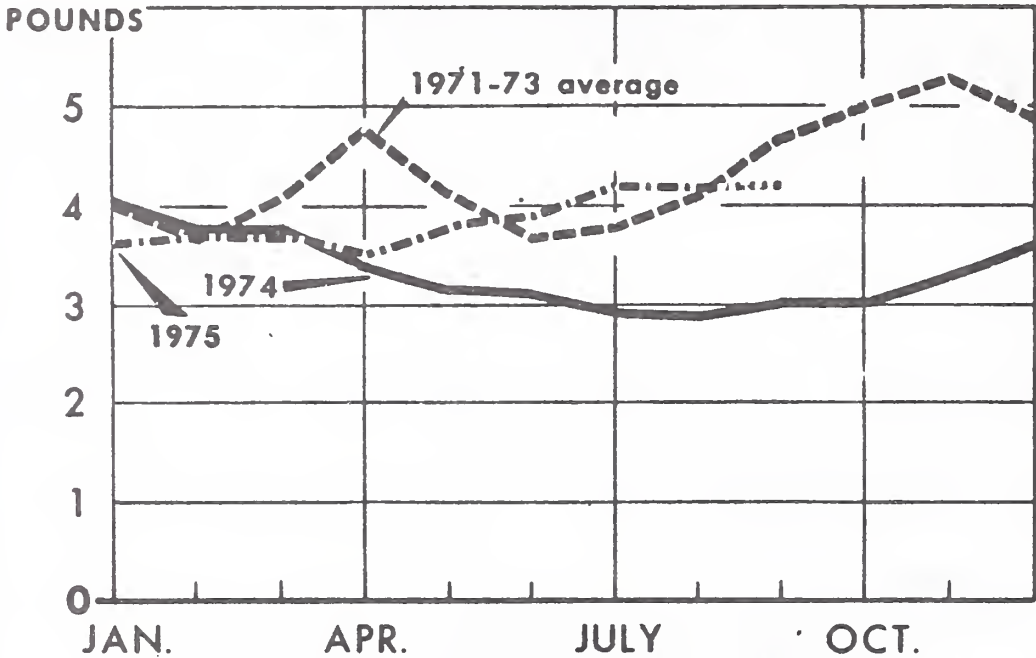
TURKEY COLD STORAGE STOCKS*



USDA

NEG. ERS 5333-75 (10)

TURKEY FEED PRICE RATIO*



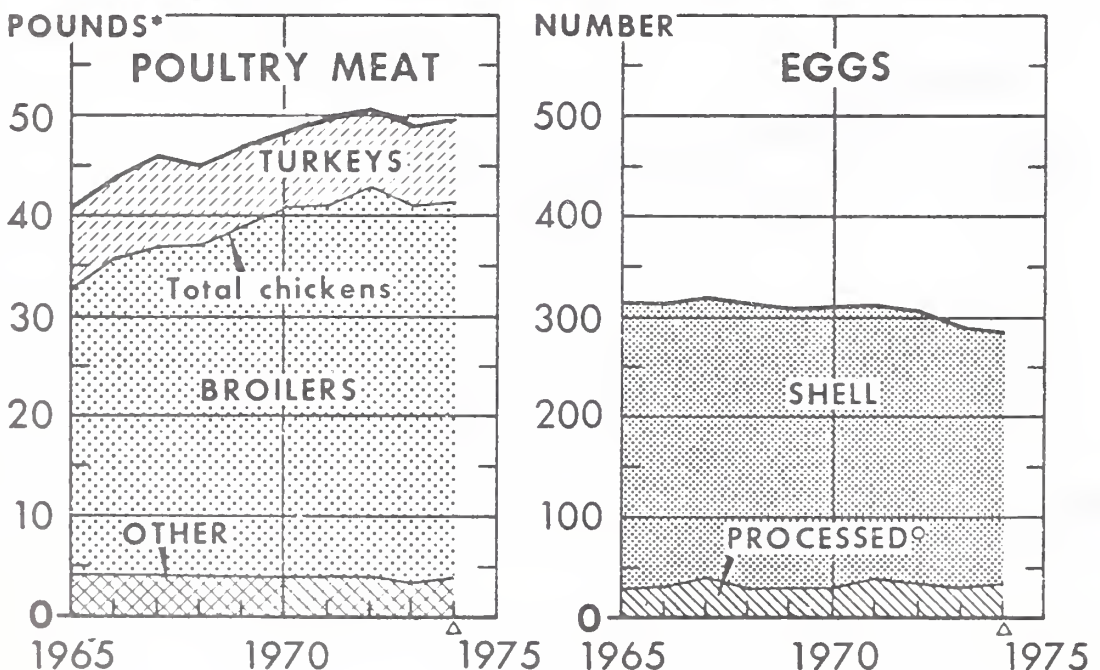
* NUMBER OF POUNDS OF TURKEY GROWER FEED EQUAL IN VALUE TO ONE POUND OF TURKEY LIVE WEIGHT.

USDA

NEG. ERS 624-75 (10)

Consumption of turkey meat in 1975 will be down less than production because cold storage stocks have been worked down. Consumption of turkey meat for all of 1975 may total around 8.5 pounds per person. This would be down from 8.8 pounds in 1974 and well below the record 9 pounds consumed in 1972. A moderate increase in consumption appears likely in 1976 as producers respond to more favorable turkey-feed price relationships.

PER CAPITA CONSUMPTION OF POULTRY AND EGGS



*READY-TO-COOK WEIGHT.

△ PRELIMINARY.

° CONVERTED TO SHELL EQUIVALENT.

USDA

NEG. ERS 3880 - 75 (5)

COMMENT ON OUTLOOK FOR POULTRY AND EGGS

[By Harold E. Ford, Executive Director, Southeastern Poultry and Egg Association, Decatur, Georgia]

We compliment the Department for making the Outlook Conference possible. The information provided is of tremendous value . . . perhaps of more value at this time than any other previous Outlook Conference . . . because it has recognized the impact of Global Marketing on the economy of domestic agriculture.

Also, throughout the Conference there has been a constant thread of emphasis on marketing. Over the years you have reviewed marketing, yet, major programming has centered around production issues. Your Conference subject matter has certainly been in step with the needs of the poultry industry.

The timing of your Conference is good. Deadlines are facing poultry and egg producers in planning production levels for the coming year. Grain production and export levels next year will have a major impact on how much production of broilers, turkeys and eggs will be programmed. Also, the effects of grain exports and grain production on the red meat industry will have a major impact on what the poultry decisions will be.

The information provided during this Conference is a tremendous service to the producers and consumers of our society. You not only did your "homework" in preparing for the Conference . . . you have laid the facts out on top of the table and called the shots as you have seen them. It is now up to the industry to take the tools of knowledge given here and apply their judgments.

To say that the poultry industry today has a guarded optimistic attitude is the understatement of the year.

The optimism is so high that it gives us great concern. The poultry industry has historically demonstrated that—"efforts flow toward profits." When given a profitable outlook it can move quickly to increase its production to a level that may prove the forecast wrong.

BROILERS AND TURKEYS

Several things presented in this Outlook Conference will serve as a stimulus to the turkey and broiler industries . . . such as: disposable income to be greater, demand factors for protein foods, grain supply availability (more than adequate), production cost favorable compared to competitive meats (high grain prices favor poultry meats over pork, etc.), pork supplies for 1976

Commercial egg production should *not be stimulated* by the information presented. Several "red flags" have been indicated.* Grain exports will have an adverse effect upon egg producers as it will increase grain prices. Unlike the broiler industry, high grain prices have a very definite adverse effect on egg profits.

The rate of lay is expected to increase or hold its own. There may be one off-setting factor. Producers today have a high percentage of "force molted" hens and *cannot recycle those hens* again with any hopes of it being a profitable program. Therefore, it is anticipated that there will be an increase in the slaughter of old layers.

The practice of force molting will be a part of production management in the future and we urge the Department to structure better data on this.

As an industry—the poultry industry stands strong in the corner of support for Secretary Butz and his continued efforts for a strong voice in the marketing of agricultural products. His position for *free trade* and *fair trade* is one that we respect. As an industry we have supported the policy of International Trade . . . yes, even for the grain exports. The grain producers are deserving of customers in other nations just as the poultry and egg producers desire to expand their world markets.

"What's fair for the goose is fair for the gander."

Now, before someone says that I was invited to be a part of this program for the purpose of praising the Secretary and his staff—let me hasten to assure you that is not a correct assumption. The poultry industry today is caught up in a "network of government involvement," that is frightening. It gives us great concern—and the industry is critical of the Department on several issues. The criticism is constructive and I know that the Department personnel will accept it as such.

MOST SIGNIFICANT FACTORS CONFRONTING INDUSTRY

In preparing for the Conference, I asked some industry leaders to list the three most significant factors affecting agriculture for the immediate future. Many factors were listed, however, without exception, the greatest concerns at this time center around "too much government." The OUTLOOK for this cost factor does not hold as much promise as the statistical data provided by this Conference.

As one person put it—"We are drowning in a government alphabetical soup . . . OSHA, EPA, FDA, USDA, FTC, HEW. . . ." It has reached the point where the "government," in trying to be the solution to problems, has become "a part of the problem."

The cost for complying with government regulations is second only to feed cost in contributing to the cost of poultry products. There are a multitude of people who are expressing alarm over rising food cost. If they really want to put a finger on a major contributor to inflation they should take a look at the regulatory agencies.

*Declining egg consumption. (The poultry industry has no magic solution to reversing this trend for 1976 and it must be taken into consideration when planning its production. Consumption has decreased due to egg substitutes, sugar prices and oil supply price. Sugar prices will be more favorable to egg products, yet the other factors are expected to increase the downward pressures on consumption.)

Recently a study was made by a University of the pretreatment standards for waste from processing plants, as proposed by the Environmental Protection Agency. Based on 19 plants within one state the cost to comply will range between 1½ million to two million dollars.

Such cost will be passed on to the consumer. The requirement has nothing to do with the quality and wholesomeness of the product.

Conflicting regulations between two or more government agencies and rules promulgated by agencies that are debatable as to being within the original intent of Congress when the legislation was passed, gives the poultry industry concern. Such regulations often add financial stress to a company and must carry a share of the inflationary problems facing consumers today.

We are concerned over the Outlook of inter-agency enforcements. An excellent example is a recent announcement by EPA (Federal Register, Wednesday, August 20, page 36339) stating the policies for Federal Procurements. In effect, the EPA is telling other government agencies to "boycott" a company that is a violator of EPA regulations. Now—what really surprised us was USDA following through and by its announcement PY-68, advising of its Amendment to incorporate the requirements of EPA pertaining to contracts for school lunch offerings.

In our judgment, such action is "boycotting" against private enterprise and will eliminate some competitive bidding.

Other concerns that trouble our producers are: (Not listed by order of importance)

The doubling of world population will place unprecedented demands on the agricultural productivity of grain exporting nations, which means that the U.S. industries that utilize grains will be faced with continuing competition from other nations.

About the only thing the U.S. has to export in volume is its agricultural products. We must accelerate such sales in order to purchase oil and other natural resources which we have become accustomed to consuming. This will result in higher food prices and a greater percentage of our income being used to purchase food.

The trends toward socialism in the U.S. seems to be irreversible and will result in reduced productivity, reduced capital investments, greater income transfers to the non-productive segments of our society.

Our concerns center around the erratic purchasing of grain by some nations . . . and we have requested that sales be scheduled in a manner as not to cause upheavals and disruption in the supply and the cash market.

It is encouraging to learn that our government is moving ahead with long range planning programs with other nations dealing with their needs. The program with Japan and more recently with the Soviet Union, should give some stabilizing effect to the gyrating grain price situations. *Forward contracting has been good for the poultry industry . . .* it lends itself to providing some stability in movement of product and it also alleviates some of the pressures during peak production periods when the poultry industry may have a volume greater than the domestic demand. Is it beyond the realm of possibility that the grain producers in the United States can forward contract with

other nations to plant a specific number of acreage that would be designated for export sales?

Trade Barriers.—The world is faced with an interesting paradox—there are people who cannot find food and there is food that cannot find people.

Why has the Department not put forth the same efforts to assist poultrymen in developing world trade as it has the grain industry?

Trade barriers continue to cripple and deny market access throughout the world to the finished poultry product. We read and hear a lot about starvation in the world, however, it is hard to convince the poultrymen today that this is a realistic situation . . . a poultryman who has demonstrated abilities to produce a supply in excess of the domestic needs and has made productivity accomplishments without government controls, and without taxpayers' subsidies.

Until three years ago it was unlawful to trade with the Soviet Union and Red China. Our government demonstrated that it could remove the greatest trade barrier in existence when it reversed itself and "opened up" the trade channels with both nations. It is my opinion that if our government exerted the same efforts in behalf of the poultry industry's finished products as it did for grain sales, that we would immediately move into a situation of profitable foreign trade for U.S. producers, give them additional productivity, and benefit what we understand to be a starving population.

State Department Influence.—In my travels, I sense a feeling throughout agriculture that the Department of State is dominating agricultural policy . . . a domination that is favorable to the industrialist and at the expense of the American farmer. If this is an incorrect assumption . . . let me stress to you the needs for correcting that impression.

Why does the agriculture industry continue to be the "whipping boy" when there are cost of living increases? Agriculture as an industry has done a very poor job of defending itself. Consumer groups and labor groups are quick to criticize the agriculture sector of our economy when there are cost increases, yet they are totally immuned from recognizing how the cost increases come about.

LEGISLATION

Legislation is a major concern of the poultry industry as it looks ahead.

Legislation is needed to require Congress to monitor the Administrative Rulemaking process to make sure that rules and regulations written by federal agencies do in fact comply with the intent of Congress when the legislation was passed. H.R. 3658 is written to accomplish this need and it deserves the attention and support of the consumer as well as the producer.

Transportation reform is needed by all modes of transportation. Requiring certain products to move on regulated carriers is an *obsolete* regulation. There is a shortage of freight and hopper cars, yet our government continues to force some truckers to roll the highways empty on a "dead head" trip. Such regulations leads to inefficiency, a waste of fuel, penalize hundreds of small independent truck owners and keep badly needed products from moving. It is imperative that the

U.S. Department of Agriculture take some initiative in working on this problem to alleviate a cost factor that contributes to higher food prices.

Tax reform legislation now before the House Ways and Means Committee will greatly affect agriculture. The extension of the investment tax credit at 10% will be a plus factor. There are other proposals that are debatable such as the elimination of cash accounting which is widely used in the poultry industry and the tightening of the reins on tax shelters.

Financial assistance is needed by the small farmers who have been caught in the inflationary cost squeeze for his equipment, supplies and labor. H.R. 9056, as passed by the House, provides for financial assistance through the Small Business Administration and deserves support by the Senate.

Minimum wages, by law, will move up to \$2.30 per hour in January. Much to the surprise of the agricultural sector of our society there is legislation before Congress (H.R. 10130) to accelerate minimum wages to \$3.00 an hour, plus an automatic increase every three months based on increases in the consumer price index. Such increases will represent a "built in" constant cost increase for consumer goods. It will be like a dog chasing its tail.

The House and Senate are currently studying amendments to the Packers and Stockyards Act (H.R. 4070 and H.R. 5493). There has been some expressed interest by some to bring into the P&SA the poultry and egg industries. The poultry industry is opposed to such action.

There is now, and we expect it to continue, congressional efforts to put agriculture under a national labor relations act by removing its present exemption. The poultry industry does not see the need for such a program and is opposed to creating another bureaucracy.

We anticipate a thorough review by Congress into the Farm Credit Tax of 1971, relating to credit for cooperatives (H.R. 7862). We have been advised that the Federal Trade Commission will be exerting efforts to get the Capper Volstead Act changed as it deals with cooperatives.

The legislation referred to does not by any means represent all of the legislation that will concern the poultry industry. They do highlight some of our major concerns as we look ahead to 1976.

There is an old saying attributed to the late Vice President Albin Barkley—"When you are through pumping . . . turn loose of the handle."

I am not through pumping . . . however, I have used the time allotted.

OUTLOOK FOR DAIRY

[By Charles N. Shaw, Commodity Economics Division, Economic Research Service, USDA]

The U.S. dairy industry saw market conditions in 1975 change almost as dramatically as they did in 1974. But in many respects, 1975 was just the opposite of a year ago. Early 1975 was dominated by heavy supplies with prices staying close to support levels and USDA buying substantial quantities. The situation changed this summer when lower milk production and strong demand sparked sharp rises in wholesale dairy product and farm milk prices. Commercial dairy stocks have been drawn down at a rapid seasonal pace in recent months. Even though milk production has recovered, increased fluid sales have kept supplies of milk for manufacturing rather tight and wholesale prices have sustained their increased levels.

The recent recovery in milk production could bring the 1975 total to between 115 and 115½ billion pounds. This means that milk output for three straight years would be almost unchanged, an unprecedented occurrence.

Milk production recovering

After falling below year-earlier levels this summer, milk production has recovered somewhat this fall as dairymen responded to rising milk prices and improved milk-feed price relationships. Milk output in October was nearly one percent above a year ago after being down almost 1½ percent in July. The Northeast and Pacific regions have produced more milk this year while the Lake States and the Corn Belt have turned out less. Of the five major dairy States, milk production has been higher in all but Minnesota, which has experienced some sharp drops in output per cow.

After rising slightly during the second half of 1974, the number of milk cows has declined at a very slow rate throughout 1975. The drops from a year earlier have stayed close to ½ percent, the slowest year-to-year declines in two decades. Large numbers of replacement heifers, low cull cow prices, and limited economic alternatives for dairymen have all contributed. Although the decline from a year earlier may be somewhat greater in coming months, many of the factors that were important this year may continue to limit declines in early 1976.

The major source of variation in milk output this year has been in milk production per cow. Dairy farmers reacted to the unfavorable feeding relationships of late 1974 and early 1975 by cutting back on concentrate feeding. Consequently, output per cow showed only small gains or was below a year ago during the first nine months of 1975. With the rises in farm milk prices this fall, farmers have begun heavier feeding and were feeding about a tenth more concentrates on Octo-

ber 1 than in either 1973 or 1974. Farmers paid \$136 per ton for 16 percent dairy ration in October down from \$150 a ton last October. Feed prices during the barn feeding season may well average below a year ago. The milk-feed price ratio stood at 1.6 in October, up from 1.2 last year. Milk-feed price relationships likely will continue more favorable during the first half of 1976 than in early 1975. In addition, supplies of home-grown grain are larger this year in many parts of the Midwest. Although silage quality is generally improved this year, high quality hay likely will be in tight supply. The more attractive feeding relationships, more home-grown feed, and the resulting heavier grain feeding likely will boost milk output per cow, which may be showing more normal gains in early 1976.

More milk likely in early 1976

Milk production likely will run above year-earlier levels in early 1976 as gains in output per cow offset the relatively small declines in cow numbers. Output for the first half of 1976 could show an increase of around one percent. Milk production later in the year will depend on milk prices, cull cow prices, crop conditions and subsequent feed prices, and developments in general economy. If milk-feed price relationships are favorable next fall, gains in milk output could continue throughout 1976. On the other hand, shortfalls in feed output, sharp increases in herd culling, or sluggish dairy prices could cause milk production to slow during the second half of the year.

Dairy prices up sharply

Following less-than-normal seasonal declines during the first half of 1975, in part due to support price increases, farm milk prices rose sharply this fall. Farmers averaged \$9.53 per 100 pounds of milk in October, up \$1.59 from June and \$1.19 from last October. Adjusted to the annual average fat test the price of manufacturing grade milk in October averaged about 70 cents above the new support level of \$7.71. The price rises were sparked by strong fluid sales, milk production declines, and moderate stock levels. Some further seasonal rises should bring the average for all of 1975 to about \$8.60 per 100 pounds, up from \$8.32 in 1974. Total cash receipts from dairying could reach about \$9.7 billion, up about 3 percent from last year.

Farm milk prices may show sharper-than-normal seasonal declines in early 1976. Potential consumer resistance to the rapid rises in retail prices and increases in milk output would combine to lower milk prices. However, farm milk prices will remain well above year-earlier levels and the recent increase in the price support level will limit any price decline.

Wholesale dairy product prices have stabilized recently at sharply higher levels than early summer. Wholesale butter prices are up about 24 cents per pound, American cheese about 20 cents, and nonfat dry milk about 11 cents. Wholesale dairy prices in the next few months likely will be very sensitive to milk production increases from a year earlier or to a decline in sales.

Retail dairy prices started rising rapidly this fall although September levels were only up slightly from early 1975. For all of 1975, the increase in retail dairy prices will average well below the 4½ percent average increase of the early 1970's and the 19 percent increase of 1974.

Prices at the retail level likely will continue rising into early 1976 as wholesale price increases are fully reflected.

Dairy sales strong

Encouraged by generally stable-to-declining retail prices during January–September, sales of dairy products have been strong thus far in 1975. Total dairy sales were almost 1 percent above a year earlier during the first nine months of the year. Fluid sales have remained strong and were up about 2½ percent from a year ago in January–September. Although weakening recently, butter sales were the highest since 1968. Sales of ice cream were very strong and other-than-American varieties of cheese showed significant gains. Although increasingly recently, American cheese sales during January–September were substantially below a year earlier and were only slightly ahead of 1973 levels. Commercial disappearance of nonfat dry milk was very weak during the first half of 1975, although it spurted in recent months as users built inventories. Nonfat dry milk sales in the first nine months were down a fifth from 1974 levels. Dairy sales are likely to slow in coming months as consumers react to higher retail prices. Cheese sales may continue to show strength but fluid sales likely will slow, and butter sales could be hurt by the widened difference between retail butter and margarine prices.

Per capita civilian milk consumption this year is likely to be about the same as or slightly above 1974's 543 pounds. However, this would still be down about 2 percent from the 1973 level. High commercial dairy stocks at the start of this year provided the extra supplies that allowed per capita consumption to hold its own. Milk use per person in 1976 may show a moderate decline in line with the long-run trend.

Commercial dairy stocks moderate

After being relatively high in early 1975, commercial dairy stocks showed rather small seasonal increases during the flush milk production season, peaked early, and have dropped at a fairly rapid seasonal pace in recent months. Commercial holdings were equivalent to 4.7 billion pounds of milk on October 1, down a third from year-earlier levels but up slightly from the levels of the early 1970's. Butter stocks in commercial hands were the second lowest on record for that date and manufacturers' stocks of nonfat dry milk were the lowest since 1950. Commercial stocks of American cheese were moderate but holdings of other varieties were at the lowest October 1 level since the 1960's. Government stocks of butter and cheese were at very low levels and dropping quickly. However, CCC had uncommitted inventories of almost 450 million pounds of nonfat dry milk on November 1. Commercial dairy stocks likely will remain at low to moderate seasonal levels in coming months unless fluid sales drop quite sharply.

USDA purchases cease

After running heavy in the first half of 1975, USDA purchases under the price support program ceased this summer with the rises in wholesale prices. More than 20 million pounds of butter was sold back to the industry in August and September and about 10 million pounds of nonfat dry milk have been sold recently. During January–October, CCC net removals totaled more than 63 million pounds of butter, 68 million pounds of cheese, and 403 million pounds of nonfat dry milk—

all considerably above year-earlier levels. This was equivalent to more than 2.0 billion pounds of milk compared with about 1.4 billion pounds for all of 1974.

Dairy imports down, nonfat dry milk exports up

January–September imports totaled less than 1.0 billion pounds milk equivalent, the lowest such level since 1969 and far below the 2.3 billion pounds imported during the first nine months of 1974. This year's decline was almost entirely the result of lower imports of both American and other varieties of cheese. While generally lackluster cheese sales made the United States a less attractive market, the most important factor in the decline in other varieties probably was the uncertainty resulting from the threat of U.S. imposition of countervailing duties. In addition to the agreement reached with the European Community, preliminary determinations have been made in the cases of Switzerland and Austria and investigations have been initiated in the cases of Finland, Norway, and Sweden. Although these disputes will be resolved in the near future, it is unlikely that cheese imports will increase substantially.

Although exports of most dairy products remain fairly minor, exports of nonfat dry milk reached about 125 million pounds during January–September, the highest such level in three years. The increase primarily was due to increased government shipments under the Food for Peace program.

Summary

Although down through the summer, milk production in October was up about one percent from a year ago and likely will continue above year-earlier levels in early 1976 as gains in output per cow offset the relatively small declines in cow numbers. Output for the first half of 1976 could show an increase of around 1 percent.

Some further seasonal rises in farm milk prices are likely during the remainder of 1975. While farm milk prices will remain well above year-earlier levels in early 1976, they may show sharper-than-normal seasonal declines if increased milk production and consumer resistance to rising retail prices materialize.

DAIRY OUTLOOK CHARTS

FIGURE 1

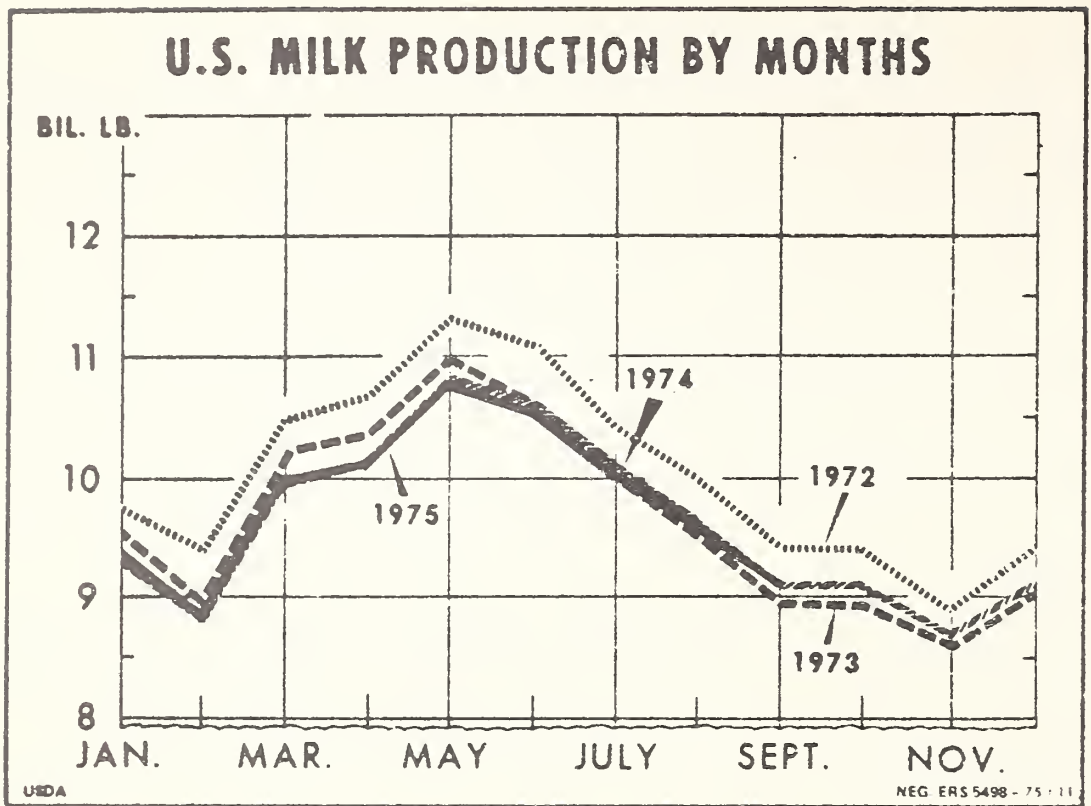


FIGURE 2

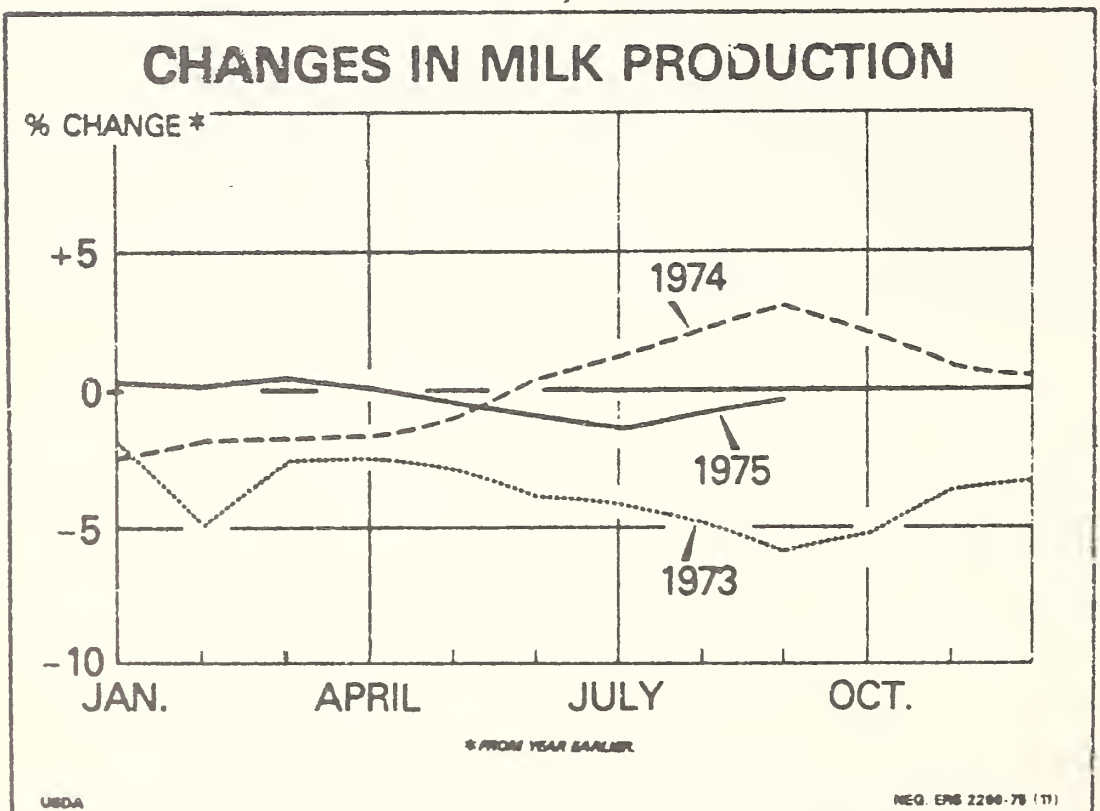


FIGURE 3

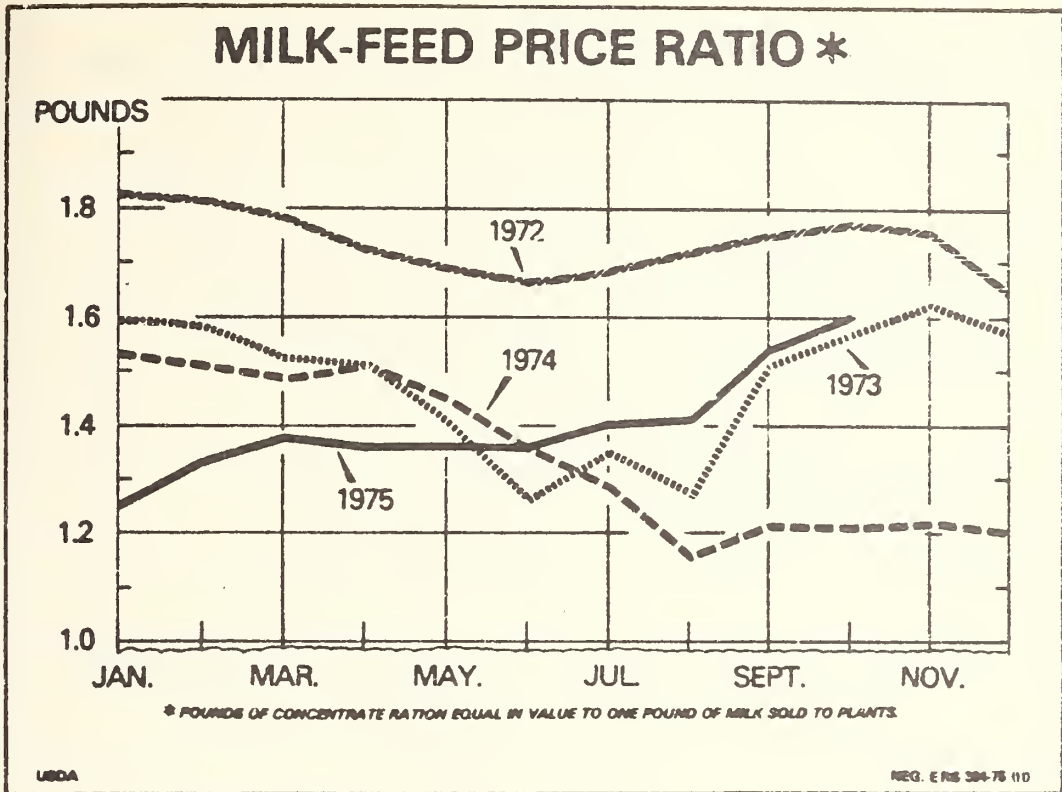


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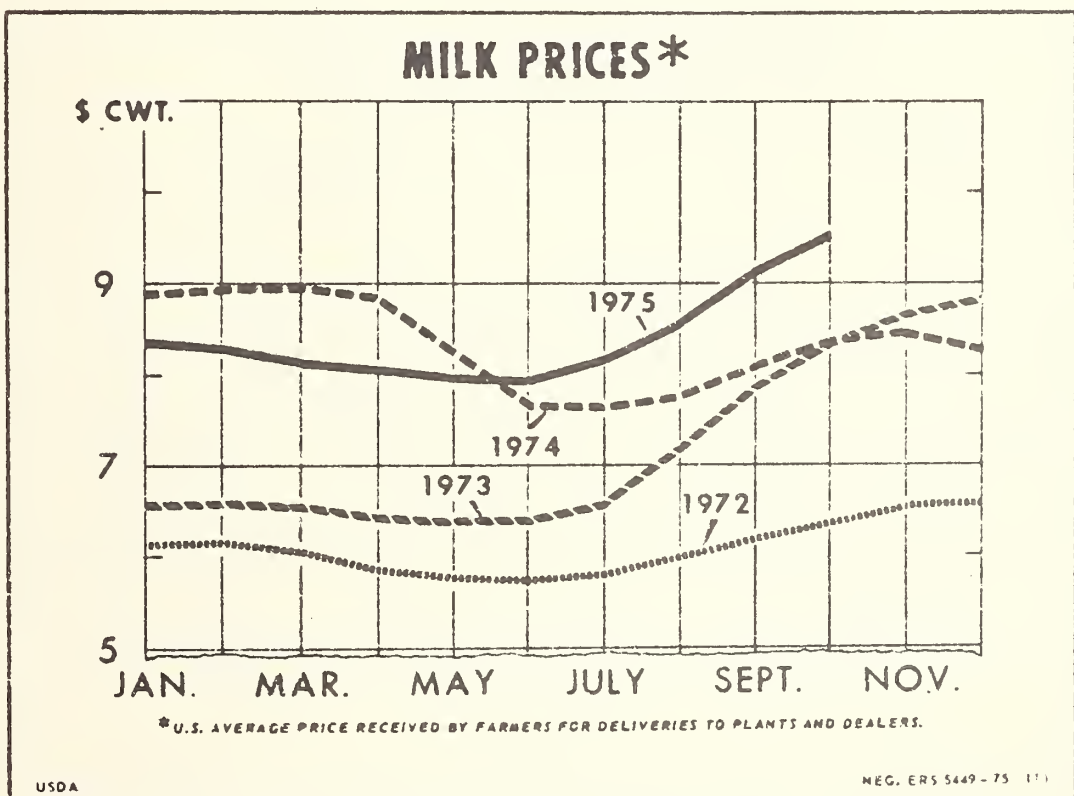


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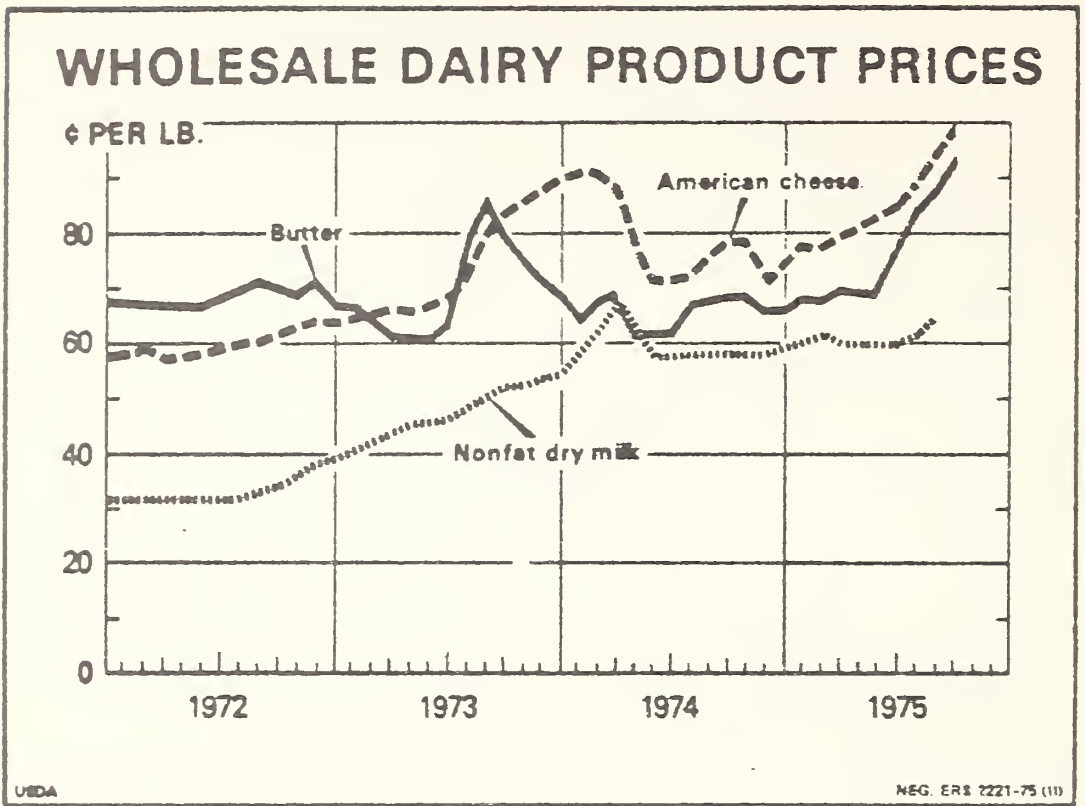


FIGURE 6

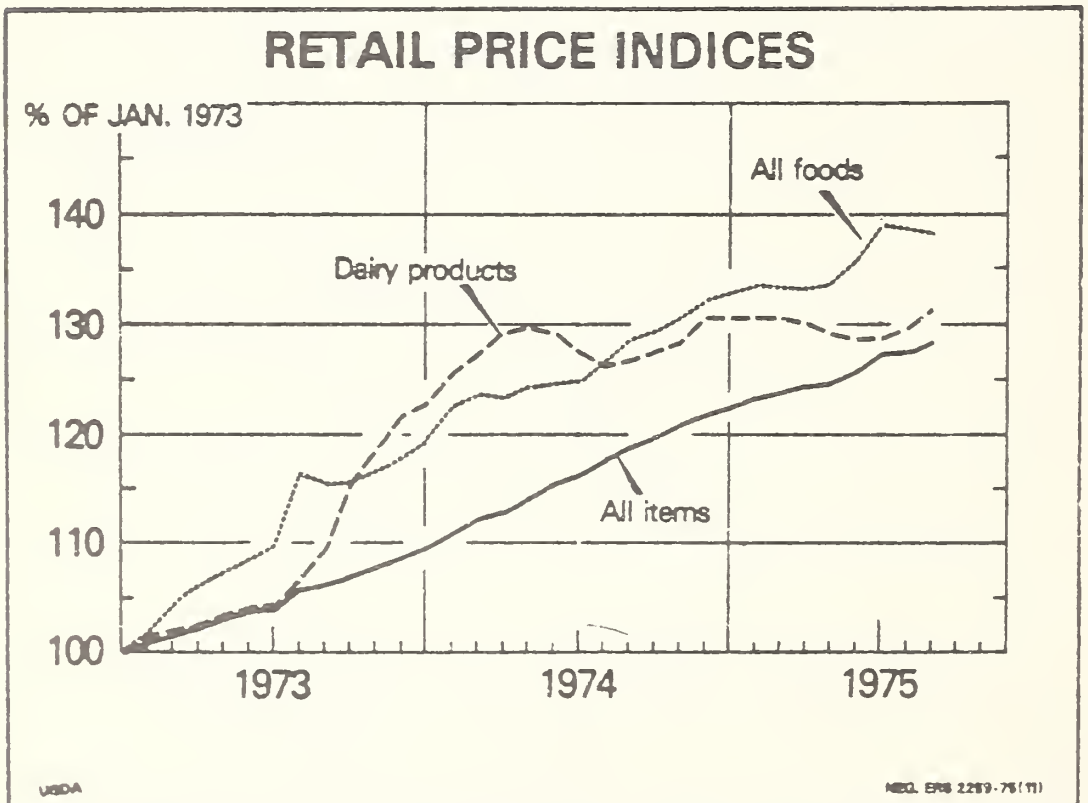


FIGURE 7

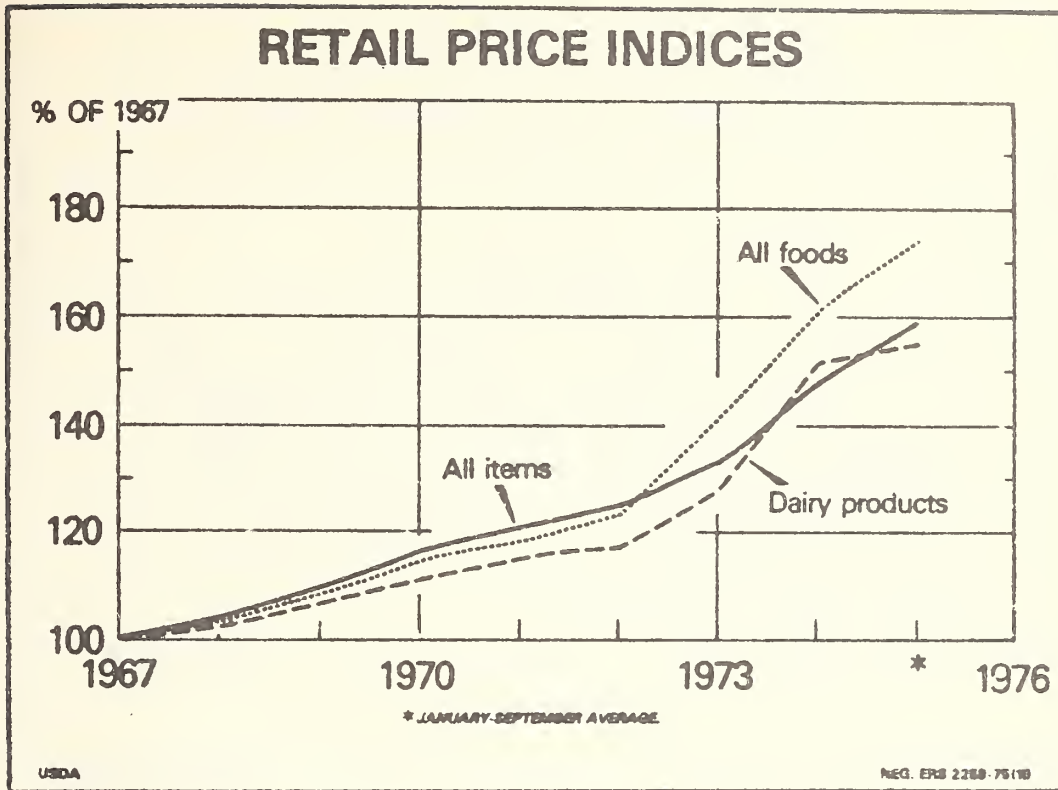


FIGURE 8

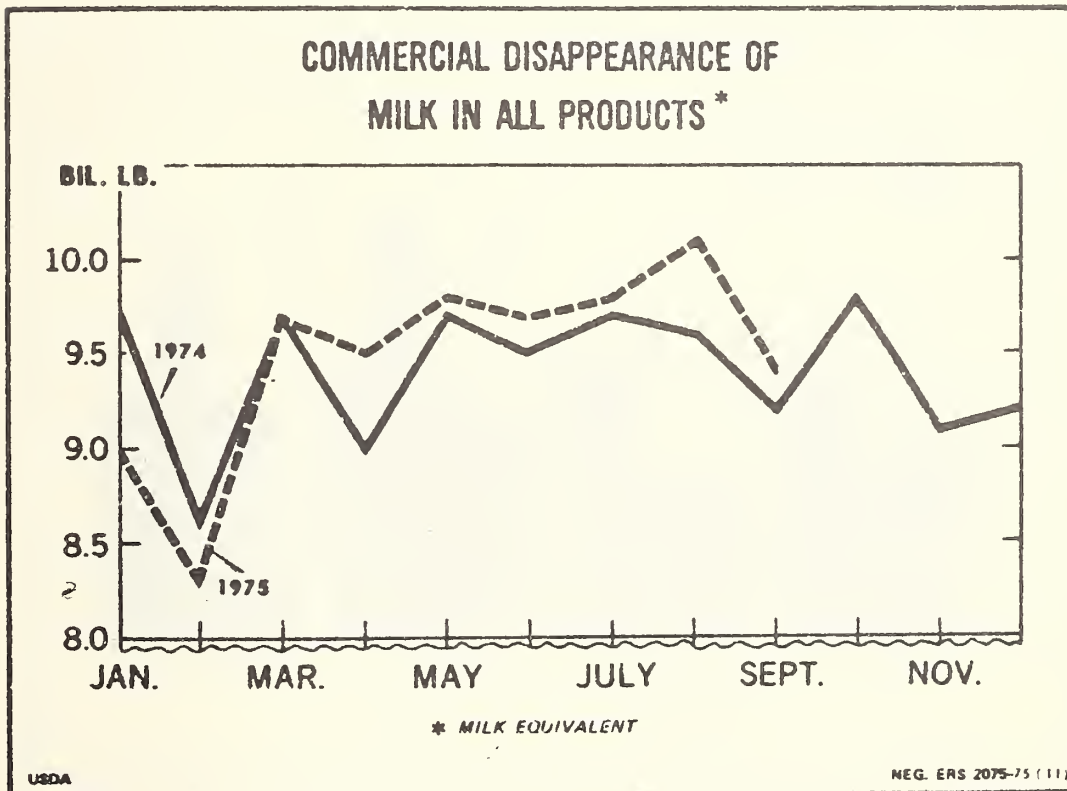


FIGURE 9

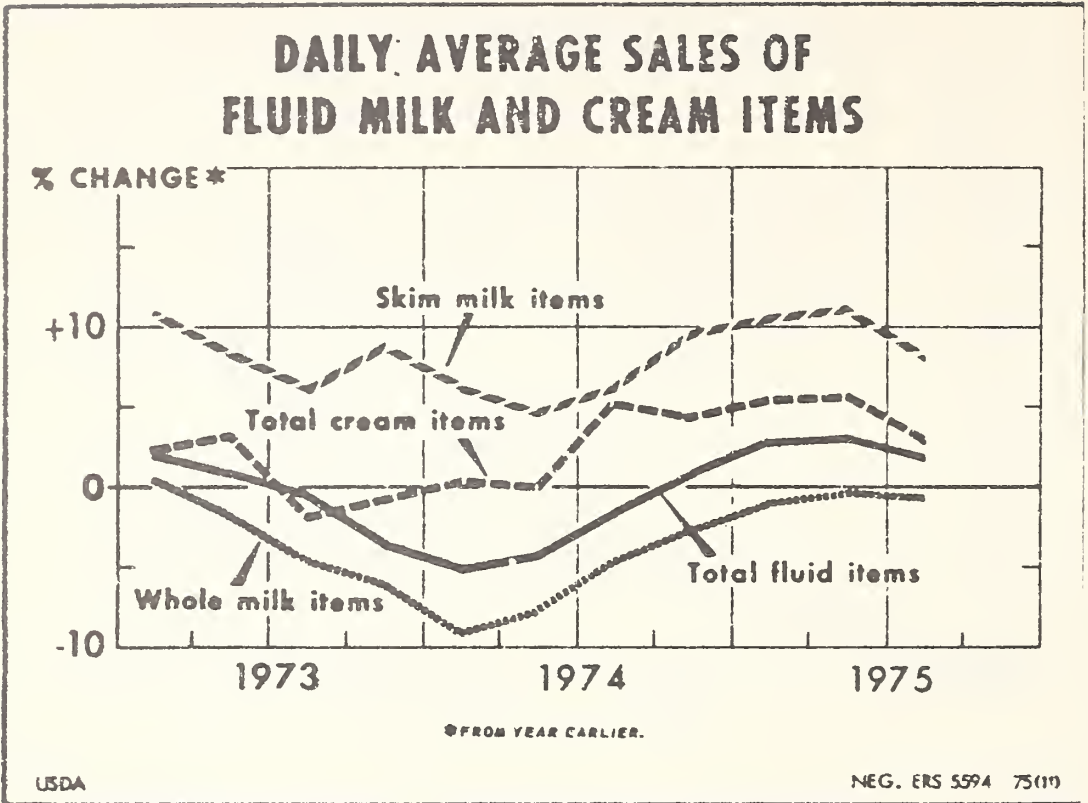


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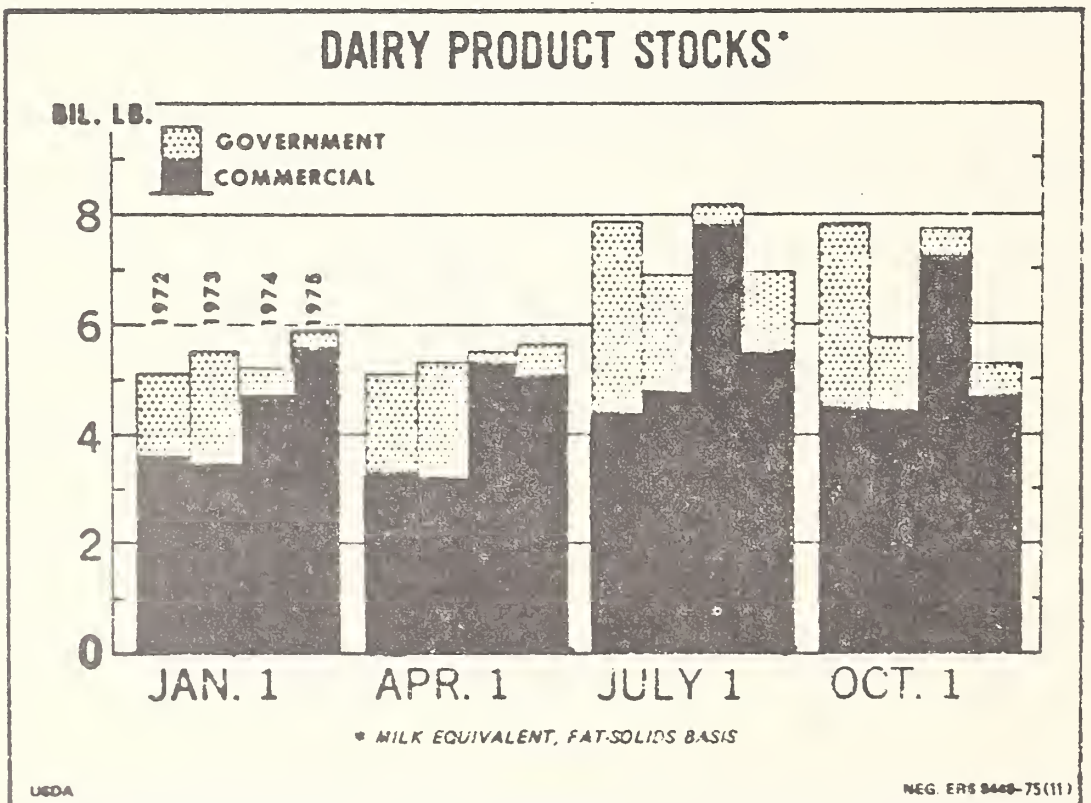


FIGURE 11

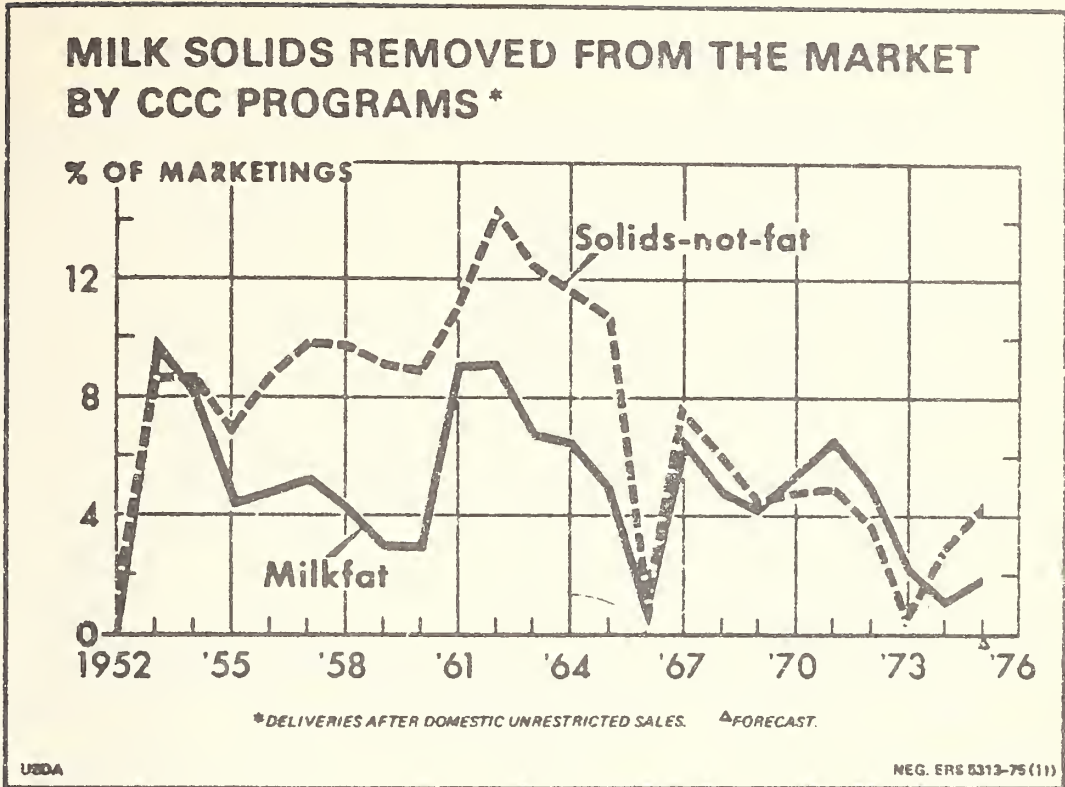


FIGURE 12

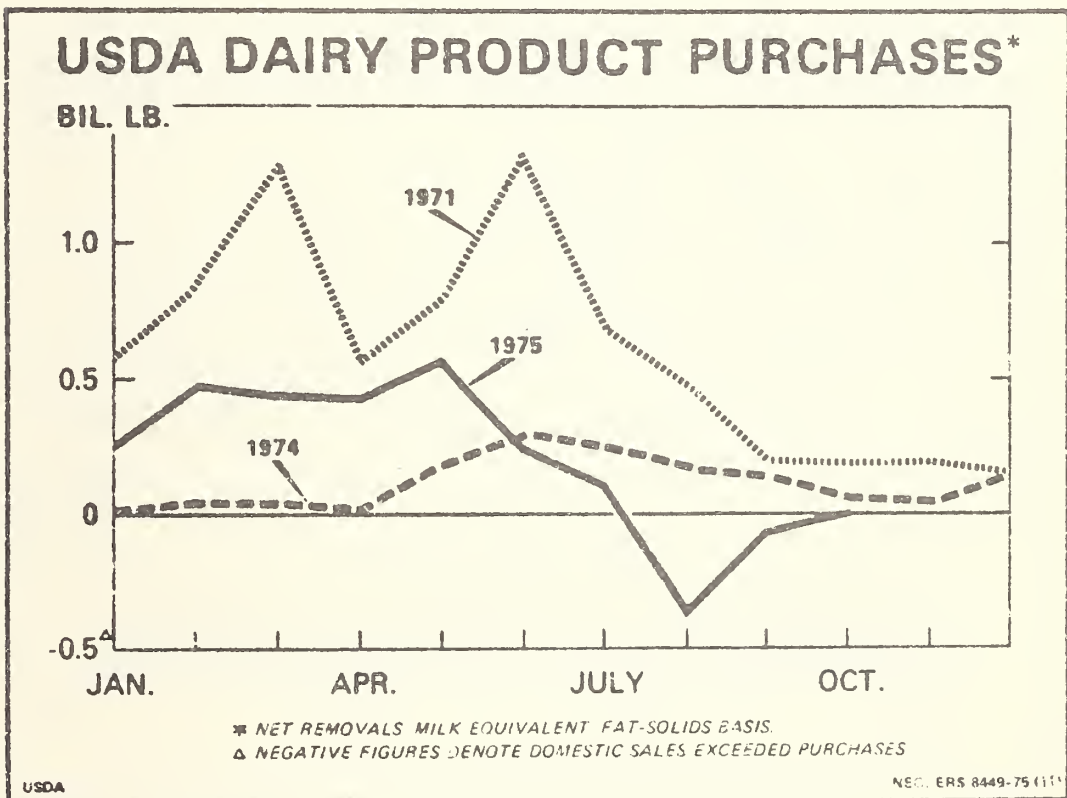


FIGURE 13

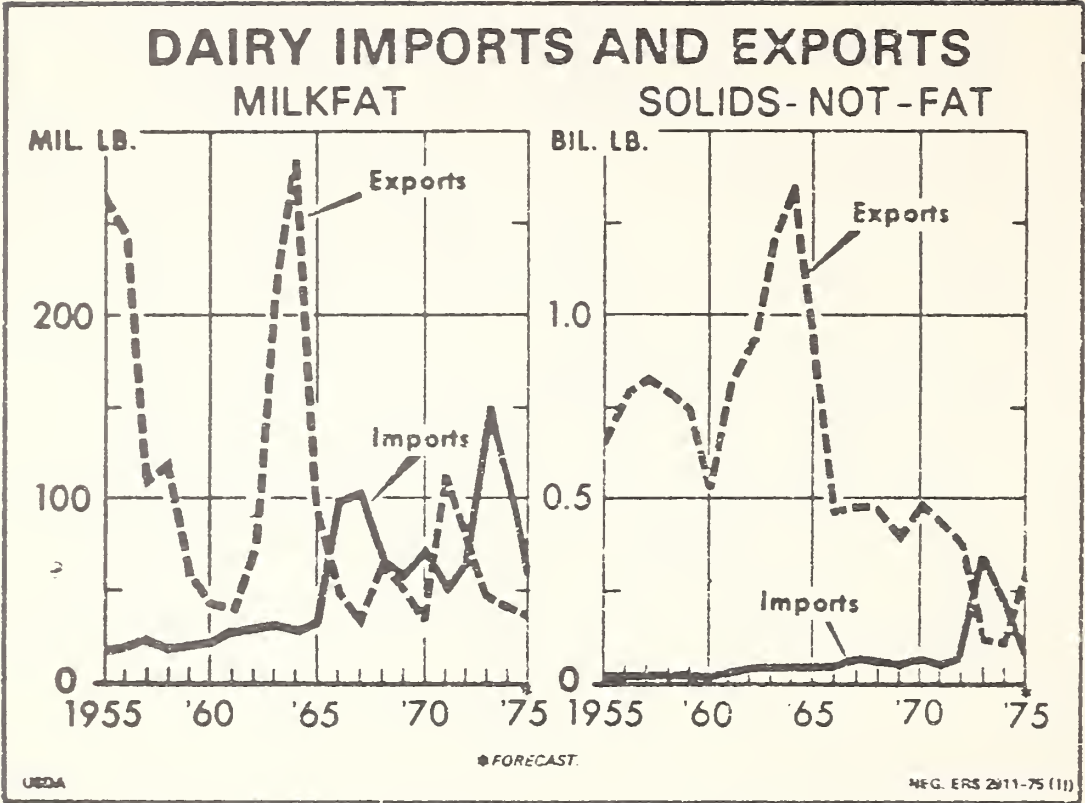


FIGURE 14

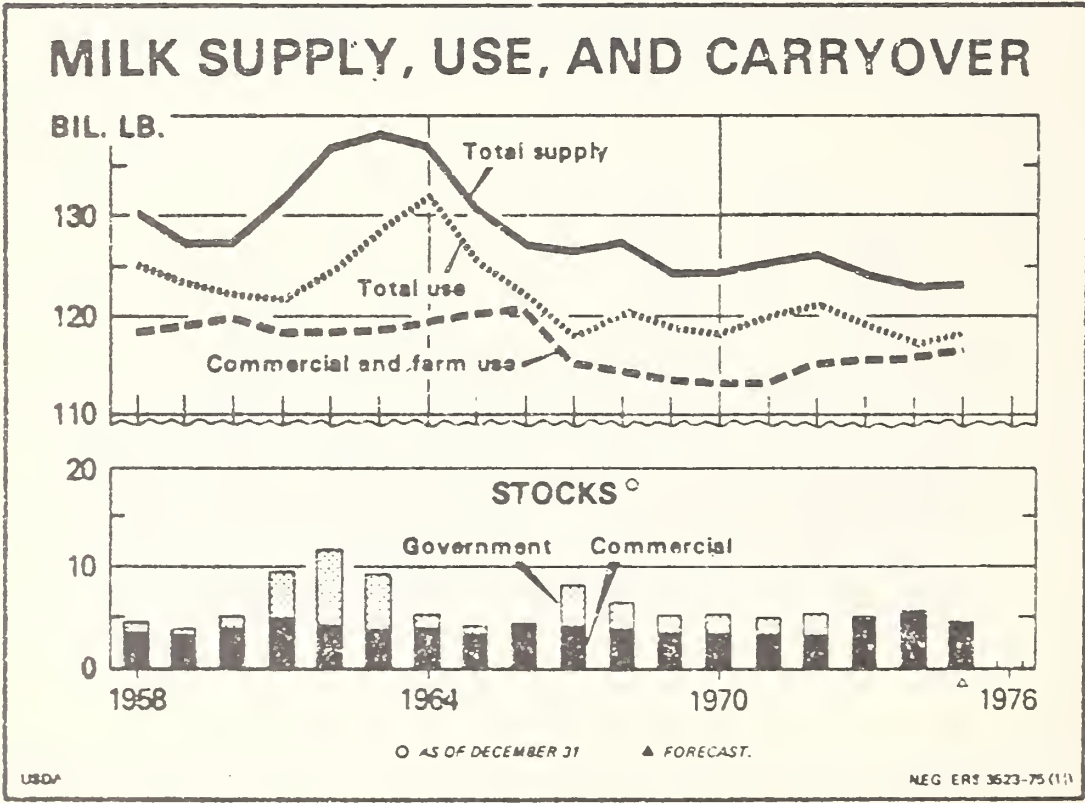


TABLE 1.—DAIRY SUMMARY, 1973-75

Item	Unit	1973	1974	1975	Percent change, 1974-75
Annual:¹					
Milk production.....	Billion pound.....	115.4	115.4	115.3	-0.1
Milk per cow.....	pound.....	10,114	10,286	10,340	+5
Number of cows.....	Thousand.....	11,409	11,221	11,150	-6
Milk prices received by farmers.....	Dollar per hundred-weight.....	7.14	8.32	8.60	+3.4
Manufacturing grade.....	do.....	6.20	7.13	7.60	+6.6
Cash receipts.....	Million dollar.....	8,080	9,399	9,700	+3.2
Value of dairy rations.....	Dollar/hundred-weight.....	4.88	6.23	6.00	-3.7
Milk-feed price ratio.....	Pound.....	1.46	1.33	1.45	+9.0
Utility cow prices, Omaha.....	Dollar per hundred-weight.....	32.82	25.56	20.70	-19.0
January-October:					
Wholesale prices:					
Butter (Chicago, grade A).....	Ct./lb.....	69.0	65.4	75.2	+15.0
American cheese (Wisconsin assembly, points, 40-lb blocks).....	do.....	69.7	80.8	83.8	+3.7
Nonfat dry milk (manufacturers' average.) ²	do.....	44.4	59.1	60.8	+2.9
Dairy products (BLS) ²	1967=100.....	127.9	146.3	151.6	+3.6
USDA net removals:					
Butter.....	Million pound.....	97.7	33.7	63.4	+88.1
American cheese.....	do.....	3.2	41.7	68.2	+63.5
Nonfat dry milk.....	do.....	27.3	208.6	402.8	+93.1
Evaporated milk.....	do.....	50.4	25.0	21.7	-13.2
Milk equivalent.....	do.....	2,178	1,175	2,030	+72.8
January-September:					
Retail prices (BLS):					
All foods.....	1967=100.....	138.6	159.7	174.0	+9.0
Dairy products.....	1967=100.....	123.5	151.4	154.7	+2.2
Manufactured products output:					
Butter.....	Million pounds.....	725.4	734.2	761.2	+3.7
American cheese.....	do.....	1,285.7	1,491.6	1,291.3	-13.4
Other cheese.....	do.....	757.9	795.8	837.0	+5.2
Nonfat dry milk.....	do.....	760.0	830.5	858.2	+3.3
Canned milk.....	do.....	861.2	835.5	725.0	-13.2
Cottage cheese.....	do.....	749.8	657.5	677.5	+3.0
Ice cream.....	Million gallons.....	606.5	611.4	661.1	+8.1
Ice milk.....	do.....	237.6	238.9	238.7	-1
Imports of dairy products: Total milk equivalent.....	Million pounds.....	1,347	2,280	951	-58.3
Commercial disappearance:					
Total milk.....	do.....	84,424	84,687	85,500	+1.0
Butter.....	do.....	607.5	652.3	709.2	+8.7
American cheese.....	do.....	1,260.4	1,383.1	1,285.4	-7.1
Other cheese.....	do.....	878.1	931.6	946.6	+1.6
Canned milk.....	do.....	791.8	730.7	687.8	-5.9
Nonfat dry milk.....	do.....	918.4	671.1	536.1	-20.1
Cottage cheese.....	do.....	749.8	657.5	677.5	+3.0
Ice cream.....	Million gallons.....	606.5	611.4	661.1	+8.1
Ice milk.....	do.....	237.6	238.9	238.7	-1
Average daily sales in urban markets:³					
Fluid whole milk.....	do.....				-7
Fluid low-fat milk.....	do.....				+10.2
Cream and cream mixtures.....	do.....				+4.6
Total fluid products.....	do.....				+2.6

¹ 1975 estimated.² January-September.³ January-August.

OUTLOOK FOR FRUITS AND TREE NUTS

[By Andrew Duymovic, Commodity Economics Division, Economic Research Service, USDA]

GENERAL PRICE PROSPECTS

The 1975/76 season is generally characterized by large supplies of fresh and processed fruits and tree nuts, which are exerting downward pressure on prices at all levels. However, prospective gains in consumer demand should help offset some of this downward pressure on prices.

If the November 1 prospects are realized, U.S. citrus production will be nearly as large as the record 1974/75 crop. While orange and lemon production is expected to be smaller, record crops are indicated for grapefruit, tangerines, Temples, and tangelos. Noncitrus fruit tonnage is estimated 5 percent larger than last year's utilized level. The increase is due primarily to the larger apple and grape crops.

Improving economic conditions in the United States and abroad in 1975/76 should boost real disposable personal income, and some of this money will undoubtedly be spent on fruits and nuts. In addition, the recent return to the "basics" in food consumption patterns in the United States which reflects increased consumer concerns about nutrition and diets, will continue to enhance overall per capita fruit use. In addition, to the anticipated increase in demand, fruit and tree nut use also is likely to benefit from prospective lower market prices.

So far during 1975, the index of prices received by growers for fresh and processed fruit has averaged slightly above year-earlier levels, due to the generally higher prices of apples, peaches, strawberries, and grapefruit last spring and summer. However, the October index of 144 (1967=100) was down moderately from September and ten percent below year-earlier levels. Decreases in prices from September were indicated for all reported fruits. Grower prices for fresh apples, grapefruit, oranges, and tangerines are expected to continue to decline seasonally through this fall and early winter in response to increases in supplies. In addition, the 1975 contract prices negotiated for most noncitrus fruit for processing use are below year-earlier levels. Consequently, the price index in the fourth quarter may be slightly to moderately below a year ago.

During the first half of 1976, grower prices for fresh apples, grapefruit, and tangerines are expected to remain moderately to substantially below a year ago. The declines will more than offset the expected higher prices for lemons, oranges, and pears. Thus, the index of prices received by growers for fresh and processed fruit during the first half of 1976 could average slightly to moderately below the comparable 1975 period.

TABLE 1.—INDEX OF QUARTERLY PRICES RECEIVED BY GROWERS FOR FRESH AND PROCESSED FRUITS
[1967=100]

Year	1st	2d	3d	4th
1972.....	106	114	119	120
1973.....	126	136	145	138
1974.....	137	143	150	142
1975.....	136	152	155	¹ 135
1976 ¹	129	139	.....	.....

¹ Forecast.

The retail fresh fruit price index has declined from the record high of 187.1 in July (1967=100). The September index dropped 8 percent from August to 164, but was still 2 percent above a year ago. The decrease in retail fresh fruit prices was mainly attributed to lower prices for apples, bananas, and grapes. As larger supplies of fresh apples and citrus become available this fall and early winter, retail prices of fresh fruit are expected to continue to decline seasonally during the fourth quarter, but are still likely to average slightly above the levels of a year ago. Retail prices of most fresh fruit during the first half of 1976 will increase seasonally, but may average slightly below the comparable 1975 period.

TABLE 2.—QUARTERLY RETAIL PRICE INDEXES FOR FRESH FRUITS
[1967=100]

Year	1st	2d	3d	4th
1972.....	114.4	124.0	133.6	123.5
1973.....	125.8	141.5	148.4	138.9
1974.....	137.7	152.5	163.5	149.4
1975.....	150.1	170.8	176.7	¹ 155.0
1976 ¹	152.0	163.0	.....	.....

¹ Forecast.

In response to larger supplies, wholesale prices of most processed fruit items have weakened. The BLS October wholesale price index for canned fruit at 165.7 (1967=100) was slightly below last year's high level. A wholesale price index moderately lower than a year ago was also recorded for dried and dehydrated fruit, but the frozen fruit and juice price index has still remained materially above year-earlier levels. With larger supplies, wholesale prices of some processed non-citrus fruit items are expected to decline further. Reflecting the decline in wholesale prices, retail prices of processed fruit, particularly canned noncitrus items, have also weakened, but are still moderately above a year ago.

CITRUS FRUIT

Citrus production (excluding California grapefruit other than desert areas) for the new season is estimated at 14.3 million tons, down only slightly from last year's record and 7 percent above 1973/74.

The November forecast of U.S. orange production for 1975/76 points to a crop of 9.9 million tons (229.8 million boxes), 3 percent below last season's record high. Prospects are off in all producing areas

except Texas. Florida, with about 78 percent of the prospective U.S. orange crop, has 7.7 million tons (172 million boxes), down 1 percent from last season. Early and mid-season varieties in Florida are up 1 percent, but this is more than offset by a decline of 4 percent in Florida Valencias. In California, Navel and Valencia oranges are down 11 percent and 15 percent, respectively, from last season's output.

In recent years processing use accounted for more than 90 percent of the Florida orange market, with about three-quarters used for frozen concentrated orange juice (FCOJ) alone. Thus, season-average returns to orange growers will be heavily influenced by conditions in the juice market. Demand for FCOJ has been very strong during 1974/75, and is likely to continue to gain in 1975/76. In addition, the moderately lower stocks of FCOJ on hand will also act to push grower prices up. The smaller orange crop in California, a major fresh supplier, is expected to keep the fresh market firm. On the other hand, prices for oranges could be dampened by the large supplies of competing fresh fruit supplies, particularly apples, and to some extent grapefruit. Also, export shipments of fresh oranges during 1975/76 are likely to fall below last year's high level.

Current prospects for oranges through the winter point to grower prices declining seasonally but averaging slightly above year-earlier levels. If the 6 percent smaller U.S. Valencia crop is realized, grower prices could advance to levels moderately above a year ago later in the season. These price increases can be expected to show up at the retail level.

A record grapefruit crop is being forecast. Supplies for 1975/76 are expected to total 2.7 million tons (66.8 million boxes), up nearly 15 percent from last season and 5 percent above the previous record set in 1973/74. The large crop this season is due to substantial increases in output in Florida and Texas.

Florida's grapefruit crop is forecast at an all-time high 2.1 million tons (50 million boxes), 12 percent above last season and 4 percent above the previous record crop harvested in 1973/74. In Texas, prospects point to a 44 percent larger crop. Last season's crop in Texas was reduced as a result of bloom damage from the December 1973 freeze.

Processor demand for the new crop remains somewhat uncertain. Carryover stocks of most processed grapefruit products are lower going into the 1975/76 season. While more chilled and frozen concentrated grapefruit juice was marketed during 1974/75, movement of canned grapefruit juices and sections has been discouraging the last couple of seasons.

Domestic movement of fresh grapefruit during 1975/76 is expected to expand, and exports may also register a moderate gain over 1974/75. The export market will be one of the key factors determining whether 1975/76 will be a banner year for growers. In the absence of strong processor demand and in view of the record crop in prospect, grower prices for grapefruit are expected to average moderately below last season. However, improved export prospects this season may curtail downward pressure on grapefruit prices.

California and Arizona are each expecting sharply smaller lemon crops this year. The two State's combined total of 779,000 tons, or 20.5 million boxes, is 30 percent below last year's record output but 15 percent above 1973/74. Domestic fresh shipments should be near last

year's level, while fresh lemon exports and deliveries to processors are likely to be down. F.o.b. prices for fresh lemons have increased sharply above last season's lower levels. Prices during 1975/76 are expected to remain substantially above last season's low level, but are not likely to average as high as 1973/74.

NONCITRUS FRUIT

The 1975 noncitrus fruit crop is forecast at 11.7 million tons, 5 percent above last year's utilized level and 7 percent above 1973. The increase was due primarily to the larger output of apples and grapes. The fresh market season is over for most deciduous crops, with the exception of apples, pears, grapes, and cranberries. Cold storage holdings of fresh noncitrus fruit at the beginning of October were only slightly above year-earlier levels since harvest started later than normal in many areas. However, stocks should be substantially above a year ago after the completion of harvest, not only because of larger crops, but also because of slackening processor demand.

Shipping point f.o.b. prices for most noncitrus fruit so far this season have generally been moderately to substantially lower than last year and will probably continue lower through early winter due to larger supplies.

The 1975 commercial apple crop at a record large 7.2 billion pounds was 13 percent above the 1974 utilized production with larger output for all States except Minnesota, New Jersey, and Oregon.

Because of a record crop, shipments of fresh apples are running substantially ahead of last year's pace. The record apple crop combined with reduced processor demand, particularly in the East and Midwest, has also resulted in substantially larger supplies available for the fresh market so far this fall. Weakening processor demand is mainly attributed to the large carryover of canned apples and applesauce. Consequently, apple prices received by growers for both fresh and processing use are substantially below a year ago. In addition, a record apple crop from Washington State is likely to cause fresh apple prices later in the season to average moderately to substantially below the unusually high levels attained last season. Also, the large prospective supply of competing fresh fruit supplies, particularly citrus, could exert some additional downward pressure on fresh apple prices through this winter.

Grape production is forecast at 4.3 tons, 2 percent above both the 1973 and 1974 crops. Although California's table grape crop was substantially lower, shipments of fresh grapes have been running moderately above a year ago. Supplies of grapes available for fresh market are larger this season since the wineries are using fewer table and raisin varieties. Thus, grower prices for fresh grapes this season are expected to average near year-earlier levels.

Reported use of California grapes for crushing through late October was down moderately from the corresponding period a year ago. The lag in crushing is due to the larger inventories of wine and slow sugar buildup in wine varieties. As a result, winery prices to growers this season have generally been moderately to substantially below last year's levels.

In spite of a larger crop, the field price for raisins in California has been settled between growers and processors at \$647.50 per ton, \$7.50 more than 1974. Because of the lateness of the 1975 season, raisin deliveries to handlers are running considerably behind those of a year ago. However, with a larger raisin grape crop and reduced demand from wineries, this year's total production of raisins is expected to be substantially above last season.

With the larger crop and slackening processor demand the supplies of Bartlett pears available for fresh market are considerably larger this year. Consequently, fresh pear prices received by growers have been substantially below a year ago and are expected to remain below last year's levels through the fall and early winter. But the expected substantial decline in winter pear production in the Northwest may firm the late season market.

Even with a moderately larger noncitrus crop, the 1975/76 canners' pack of most noncitrus fruit is likely to be below that of a year ago. However, total supplies of canned noncitrus fruit are still expected to be above that of a year ago because of larger carryover stocks at the beginning of the season.

On the basis of data available for nine canned noncitrus items, total pack for this season decreased almost 7 percent from a year ago. Lower pack is indicated for all items except apricots and red tart cherries. A 12 percent decrease in the clingstone peach pack is chiefly responsible for the smaller pack. However, with the carryover for these nine items sharply larger than a year ago, total supplies for 1975/76 marketing are still about 4 percent above a year earlier.

The U.S. pack of frozen deciduous fruit and berries this year is not expected to differ significantly from the 1974 pack, but total supplies could be moderately below a year ago. On the basis of fruit movement to processors so far this season, the pack of frozen strawberries will be above a year ago, while those of red cherries, blackberries, and blueberries are expected to be less. However, because of the sharp drop in imports of frozen strawberries, the October 1 cold storage stocks of frozen fruits and berries (excluding juices) were 7 percent smaller than a year earlier.

Production of dried fruit for the 1975/76 season is expected to total above that of last season. Early season industry estimates indicated that California may produce 270,000 tons of raisins, 12 percent more than last year. Thus, with the substantially larger carryin this year, the total supply of raisins will be considerably above last season.

Production of dried prunes, the other major dried fruit item, is estimated at 150,000 tons (dried basis), 6 percent above last year. However, since none of the 1975 marketable prune crop in California will be set aside as reserve, the total supply of dried prunes for 1975/76 will be moderately above a year ago, even with a materially smaller carryin at the beginning of the season. In view of the ample supply, wholesale prices for raisins and dried prunes are expected to remain below a year ago.

TREE NUTS

The 1975 crop of four major edible tree nuts, almonds, filberts, pecans, and walnuts—is one-tenth above last year's output. Walnuts, filberts, and pecans are forecast much larger and more than offset the

sizable decline in almond production. Good prospective domestic and foreign demand will keep grower prices from decreasing sharply. However, with large domestic and foreign output, grower prices for most tree nuts this season are likely to average moderately below 1974.

Although the almond crop is 27 percent smaller this season, total supplies are slightly greater because of the substantially larger inventory. With large tree nut supplies this season, grower prices are likely to average moderately below 1974.

The U.S. walnut crop was record large and early reports indicate foreign production will also be up sharply from last year's low level. Grower prices for the 1975 crop will be adversely affected by the larger supplies of competing domestic and foreign tree nuts, and are not expected to average above the low level of a year earlier.

U.S. production of pecans in 1975 is up 77 percent from last year's "off year" crop. Carryover stocks of pecans at the beginning of this season were substantially smaller than in 1974, offsetting the increase in production. Consequently, prices paid to growers early in the season are expected to average near year-earlier levels. However, after the distribution pipelines are refilled, supplies may hold prices slightly below last year.

Increases in both domestic and foreign supplies are also likely to lower U.S. grower prices for new crop filberts.

OUTLOOK FOR FRUIT AND NUT EXPORTS

U.S. export prospects for 1975/76 vary among individual fruit items. While overall exports increased during 1974/75, exports of many items declined because of high prices and the slowdown in general economic activity abroad. However, some recovery can be expected this season.

Acting to push up exports will be the larger domestic supply of many major items and anticipated lower prices. In addition, foreign demand could strengthen during 1975/76 as economic recovery continues around the world. On the other hand, our exporters will face strong competition. Exports could be dampened by the prospective larger available foreign supplies of some major items, especially apples, citrus, and tree nuts. Also, the recent appreciation of the U.S. dollar on foreign exchange markets will increase the cost of U.S. goods to foreign buyers if the dollar remains firm. The tariff and nontariff barriers are also important factors, but it's difficult to predict how they might change. In some instances, nontariff barriers have been accentuated. For example, a concern to our canned fruit exporters is the recent adoption by the European Community of a system of minimum import prices and special import licensing provisions.

In the fresh fruit sector, export shipments of U.S. oranges and lemons during 1975/76 may not match the high levels of last season with smaller prospective U.S. crops as well as larger supplies from the Mediterranean region likely. However, grapefruit are expected to show a good gain in view of the record domestic crop, likely lower market prices, and strong foreign demand. Larger foreign supplies of apples in Canada and Western Europe indicate export prospects may not be favorable. However, with aggressive promotion of the record U.S. apple crop in such secondary markets as Latin America and Far East, apple exports could total only a shade below a year ago.

In the processed fruit sector, export prospects for canned fruits are somewhat more favorable and are likely to increase slightly over last year's low level. Demand for cherries and fruit cocktail appears strong, while peaches, pears and pineapple may hold about the same as a year earlier. However, the recent currency devaluation in South Africa, a major foreign exporter of canned fruit to Europe, will enhance that country's competitive position relative to U.S. exporters.

Exports of processed citrus juices may register an increase over a year earlier, particularly frozen concentrated orange juice. Brazil, the leading foreign supplier of FCOJ, is reported to have a sharply smaller orange crop. From present indications, it appears exports of dried fruits, mainly prunes and raisins, will also be higher.

U.S. exports of almonds and walnuts are expected to continue to increase during 1975/76, but the competition will be keen with larger available foreign supplies.

PER CAPITA FRUIT CONSUMPTION

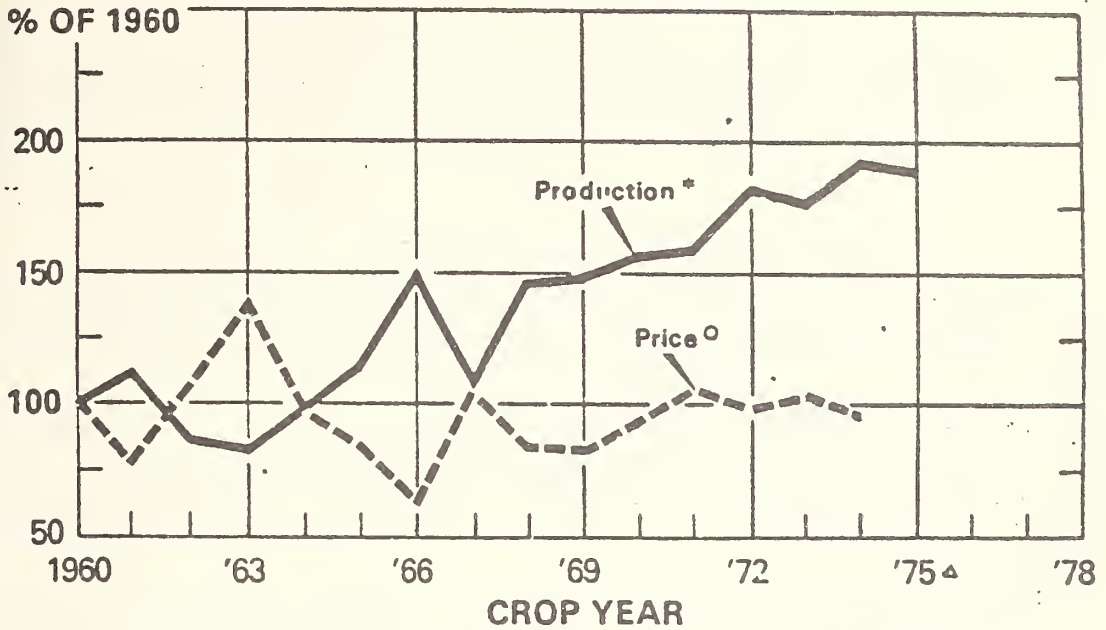
Civilian per capita fruit consumption showed a good gain during 1974, increasing nearly 4.5 pounds to 203.2 pounds (fresh weight equivalent). Consumption of fresh fruit, particularly noncitrus fruit, showed a significant increase of 2.7 pounds to 78.3 pounds per person. Many fruit shared in the increase while fresh citrus use remained unchanged. Overall, processed use rose less dramatically from 123.2 pounds per person in 1973 to 124.9 pounds last year. The increase in processed citrus consumption more than offset the decrease in processed noncitrus.

Preliminary estimates indicate a sharp increase is in prospect for fruit consumption during 1975, up to 212 pounds. Fresh use will continue to expand, increasing 5 percent to 82 pounds per person, and processed use will also show a good gain of nearly 5 pounds per person to about 130 pounds.

The most significant change for processed fruit has been the continued growing importance of fruit juices, especially chilled and frozen orange concentrate. However, increases are also indicated for frozen and canned noncitrus fruit.

If realized, 1975 fresh fruit use will be the highest since the early 1960's. Fresh noncitrus consumption at 53 pounds showed an increase from 51 pounds during 1974. The largest increases were recorded for apples and grapes while bananas were off this year. Per capita use of fresh citrus, at an estimated 29 pounds, increased nearly 2 pounds above the level of the 3 preceding years because of the record orange crop during 1974/75 and good consumer demand for fresh fruit.

CITRUS FRUIT PRODUCTION AND PRICES

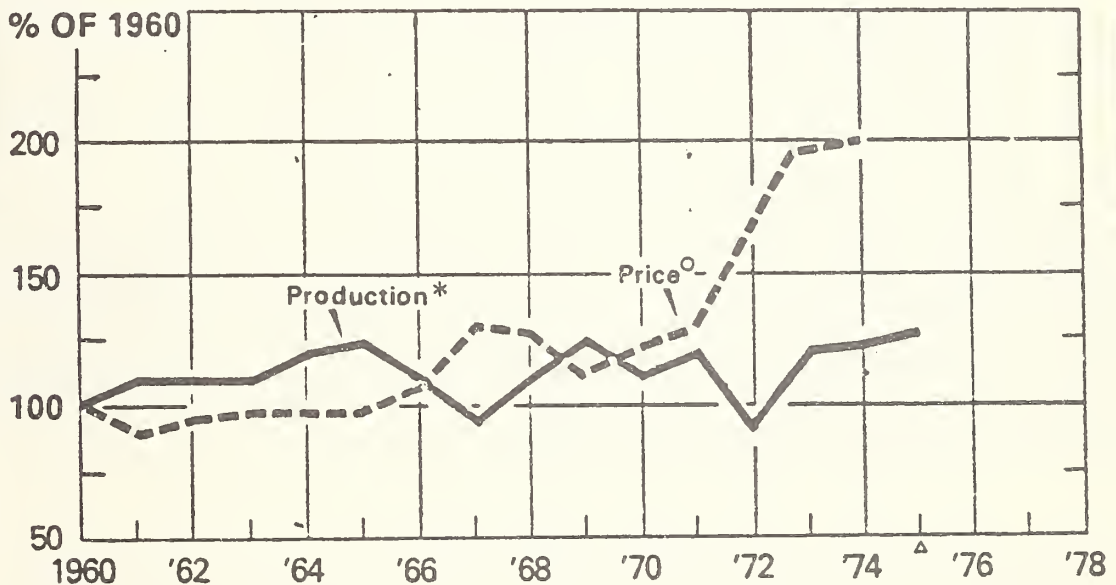


* INCLUDES PRODUCTION OF ALL CITRUS FRUITS. ^o SEASON AVERAGE PRICE TO GROWERS.
PRICE WEIGHTED BY PRODUCTION ^Δ PRELIMINARY.

USDA

NEG. ERS 2042-75 (10)

NONCITRUS FRUIT PRODUCTION AND PRICES



*15 IMPORTANT FRUITS. ^o SEASON AVERAGE PRICE TO GROWERS.
PRICE WEIGHTED BY PRODUCTION ^Δ PRELIMINARY.

USDA

NEG. ERS 8485-75 (10)

OUTLOOK FOR VEGETABLES

[By Charles W. Porter, Commodity Economic Division, Economic Research Service, USDA]

GENERAL SUPPLY AND DEMAND PICTURE

With improved business conditions, the demand for fresh and processed vegetables is expected to be generally good the first half of 1976.

Processed vegetable disappearance ought to exceed the lackluster 1974/75 performance and move nearer to the level of 2 years ago. With larger supplies available and with a moderate degree of economic recovery expected, these two factors should provide the stimulus for increased use.

The 1975 fall potato crop is 8 percent smaller than the record set a year earlier. Prices the first part of the storage season may not be greatly different from a year earlier, as processors are paying growers less so far this season. But with a steady demand for table stocks and the various processed products, markets could show substantial strength later in the storage season. Furthermore, the short crops in Europe and Latin America raise the prospect of export sales, a market factor usually of minor importance.

With sharply smaller crops in the East and Midwest, but a slightly larger supply in the Pacific Northwest, there will be less price difference than usual between the round white and Russet varieties this year. Retail prices for fresh potatoes will probably show some uptrend during the storage period if growers follow an orderly market pattern.

The dry edible bean crop of 18.3 million cwt is 12 percent below the large 1974 crop. Despite a relatively large carryover, available supplies are smaller and the bean price prospect is stronger than a year ago. With a short crop of navy beans in Michigan, average prices for white classes are likely to be much improved over a year ago. However, the larger 1975 crops in States where pinto beans are important suggest steady to weaker prices for this class. Exports during 1974/75 totaled a record high 5.1 million bags, but shipments may be down some in 1975/76 because of the smaller supply.

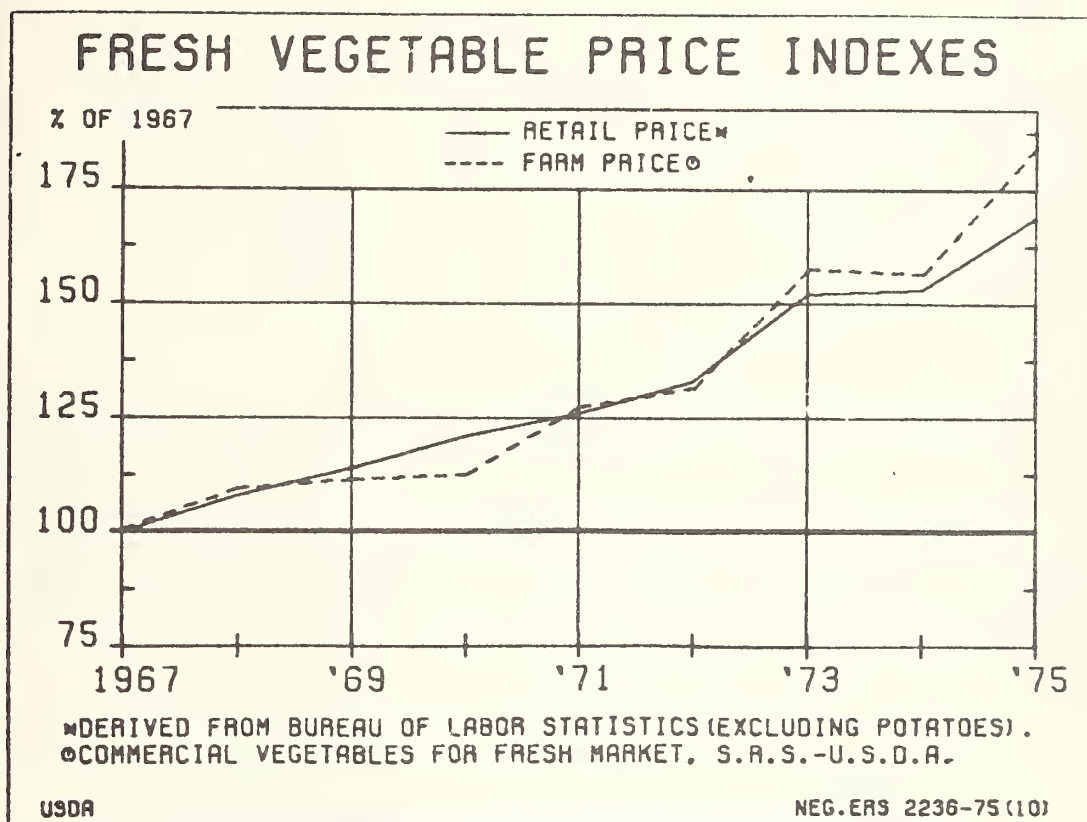
FRESH VEGETABLES

Grower prices this fall for fresh market vegetables are likely to be moderately above a year earlier, as supplies are trimmed slightly. Retail prices during the fourth quarter can also be expected to be the same or slightly above the third quarter of 1975 and moderately above the fourth quarter of last year.

Acreage of vegetables for fall harvest is only 1 percent larger than a year earlier, and if yields are about on trend, total output could turn

out as much as 6 percent less than last year's high-yielding crops. The largest acreage gains are for salad vegetables—tomatoes, peppers, and cucumbers—while broccoli and cabbage plantings are both substantially smaller than a year earlier.

Fresh market vegetable prices received by growers showed some seasonal decline late this summer, but third quarter prices remained more than a fifth higher than last year. Retail fresh vegetable prices have also reflected the higher farm prices, but for the first 9 months of 1975 they rose at a slower rate than farm prices, suggesting a narrowing of retail margins.



THE NEW LABOR LEGISLATION IN CALIFORNIA

Under provisions of California's new farm labor law, and after more than 200 representative elections, the two rival unions, the International Brotherhood of Teamsters and United Farm Workers had both won substantial numbers of workers. It was also apparent that most workers desire some union representation. Although a large number of elections have been held, some have been challenged, and run-offs may be held in some instances. Very few results have been certified thus far by the California Agricultural Labor Relations Board.

Several legal issues have been raised by this new law and some have no precedent in the industrial labor sector. Chief among these is the question of right of access to growers' property. Also, the Labor Board recently ruled that multi-employer bargaining units are not allowable. The ruling was made against the 156 farms in the Western Growers Association which now has a single contract with the Teamsters.

At this point, it is not possible to assess the impact of this new legislation, but in all probability, it will still provide growers the economic incentive to continue the trend toward further mechanization. Fruit

and vegetable interests in Texas, Washington, and Florida are watching closely how these developments affect the California industry.

Fresh vegetable tonnage produced the first half of 1975 was 2 percent less than a year earlier. This slightly smaller domestic output, plus a 19 percent reduction in imports, explains the higher prices which have prevailed much of this year. The following table shows that total fresh vegetable supplies the first half of 1975 were 5 percent less than last year.

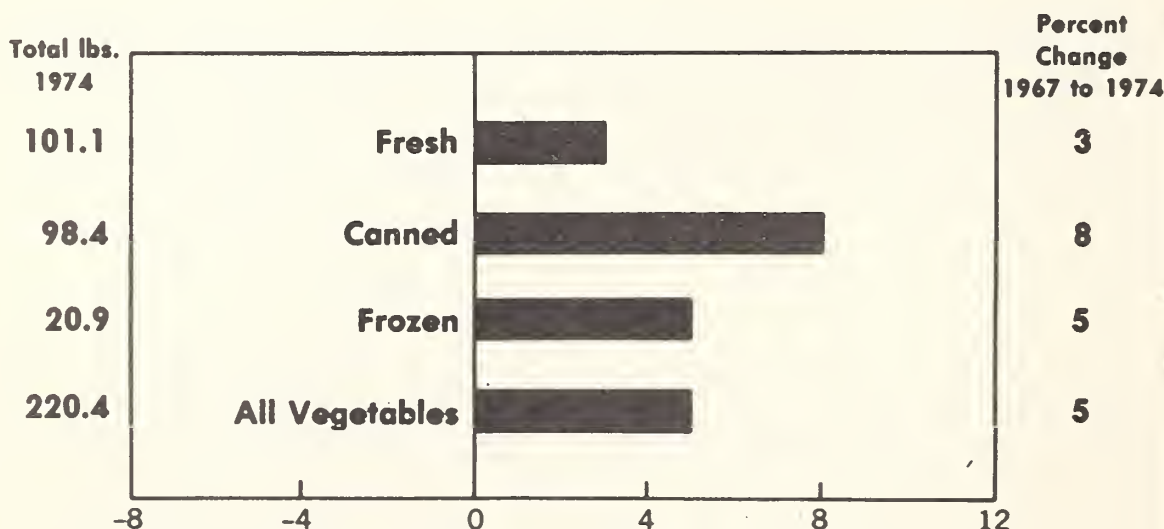
FRESH VEGETABLE AND MELON SUPPLY

Supply	1974	1975	Percent change from 1974
U.S. winter produce.....	34,811	33,403	-4
U.S. spring produce.....	53,050	52,678	-1
U.S. spring onions.....	6,199	5,248	-15
Imports (January-June).....	14,499	11,888	-18
1st 6 mo supply.....	128,559	103,217	-5
Balance of year:			
U.S. summer produce.....	68,512	NA	
U.S. fall produce.....	40,300	NA	
U.S. summer onions.....	26,846	24,557	-9
Imports (July-December).....	2,258	NA	
Annual supply.....	246,475	NA	1-4

¹ Estimated.

The reduced vegetable supply the first half of 1975 readily explains the higher prices received by growers. For the balance of the year, production is expected to be closer to a year earlier, with a total supply in 1975 possibly 3-5 percent smaller than a year earlier. The 1974 vegetable supply was the largest on record, thereby accounting for some gain in per capita vegetable use for that year. Per capita use in 1975 will probably ease back to 1973 levels.

CHANGES IN VEGETABLE CONSUMPTION PER CAPITA, 1967 TO 1974 *



* FRESH WEIGHT BASIS; EXCLUDES POTATOES, SWEET POTATOES, AND MELONS; DEHYDRATED ONIONS INCLUDED IN FRESH.

PROCESSED VEGETABLES

LARGER TOMATO CROP HIGHLIGHTS CANNED VEGETABLE PACKS

Substantially larger supplies of canned and frozen vegetables are in view for this marketing year which ends next summer. If current expectations are realized, processing vegetable tonnage this season will be boosted 11 percent over 1974. With reduced disappearance of 11 canned vegetable items in 1974/75, the carryover of canned vegetables was larger than other recent seasons. The materially larger tomato tonnage this year will boost total pack volume of canned vegetables. Excluding tomatoes, the pack of canned vegetables will probably be about the same or slightly more than a year earlier. With larger carryovers, canned tomatoes, tomato products, peas, snap beans, and sweet corn will be in substantially heavier supply this season. This year growers delivered a record 7½ million tons of tomatoes to California canners with peak weekly deliveries exceeding 800,000 tons.

ALSO LOOK FOR LARGER FROZEN VEGETABLE SUPPLIES

Frozen vegetable supplies also are expected to be moderately larger this season. The carryover of seven leading items was sharply larger this year, and pack prospects suggest little overall change from 1974. Therefore, total supplies of frozen items are expected to be larger as well this year. Stocks of frozen vegetables on October 1 were 1.7 billion pounds a record for the month, with some additional pack to be included. Aggregate holdings are seasonally the largest in November.

With supplies of all processed vegetables the largest in recent seasons, wholesale prices have weakened in recent weeks. Also, there have been more promotional allowances offered buyers this fall than during the past two marketing seasons.

POTATOES

The U.S. fall potato crop of 267 million cwt represents a drop of 8 percent from the record fall crop in 1974. But, with much less shrink expected this year, supplies may not be off as much as implied by the production estimate. The 8 Eastern States combined expect to harvest 47.8 million cwt this fall, 21 percent less than 1974. Yields in New York and Pennsylvania have tended to compensate for the sharply reduced Maine output.

Crop production in all the important Central States is down from 1974. Contributing to the lack of output in Minnesota and North Dakota was loss of plantings in flooding during early summer. Some planting first thought to be lost actually did produce some potatoes. Yields, however, point out how poorly that acreage fared. Minnesota's yield per harvested acre dropped 8 percent from 1974; North Dakota's 6 percent.

Western States actually produced more than 1974; with newly developed desert-type land in Oregon, Nevada, and Washington primarily responsible. Overall, the West intends to dispose of 165.8 million cwt, about 3 million sacks more than last season. Given a return to a normal end-of-year frozen product inventory position, then North-

west processors should be able to get by with 5-6 million cwt smaller processing crop for this purpose than was the case July-December of 1974.

STORAGE STRATEGY

This year growers have more options than in years when they were forced to store crop. More storages have been built recently, particularly in the Pacific Northwest, to facilitate orderly release of crop to fresh and manufacturing outlets.

On the other hand, a slowdown in fourth quarter dehydration and freezing activity will keep storage totals higher than what a U.S. crop of 267 million cwt would normally imply. Pacific Northwest storages could have a December 1 stocks position well above the 89.8 million cwt under cover in 1974. Stocks of frozen potatoes on October 1 were 21 percent higher than on the same date a year earlier.

Prices to growers the first part of the storage season may not be greatly different from a year ago, as processors are paying less thus far this season. But with a steady demand for table stock and the various processed products, markets may show substantial strength by March or April. This end-of-season upswing could be dampened by a large spring crop from Kern County, California. Heavier use by processors during January through March should tend to push stocks low enough to stimulate demand the latter part of the storage season.

OUTLOOK FOR UTILIZATION 1975/76

With a smaller fall crop this season, table stock use can be expected to contract sharply from the 124 million cwt used a year ago. An estimated 105-110 million cwt could be used this way, more in line with 1973/74.

The smaller crop will also force some reduction in processed food use—one of the few times this has happened in several years. Currently, large stocks of frozen products have not encouraged a heavy rate of early packing thus far this season. Although trade comments and a limited number of price quotations seem to imply heavy stocks of dehydrated products, quantities of raw potatoes moving into this channel may not greatly change from the roughly 35 million cwt used in 1974/75. Chipping use may be expected to decline moderately this season, perhaps accounting for about 31 million cwt. Again a limited quantity of 4-5 million cwt probably will be canned.

When the crop is small, the percentage of the crop reported as shrinkage or loss tends to be lower than in years of generous production. Therefore, the 1975 loss, residual, and feed share will probably look more like the pattern of 1972 and 1973.

SWEETPOTATOES

The U.S. sweetpotato crop is forecast at 14 million cwt, 2 percent more than last year. Crops this size have been more or less typical of the industry ever since the mid-1960's. North Carolina expects to harvest 4.6 million cwt, a sharply larger crop this year as acreage for harvest is substantially larger there. Yield prospects remain very good despite some hot dry weather during August. In Louisiana, the other

leading producer, both acreage and yield are less than 1974. Among the other more important States producing in the million cwt range, Virginia and Mississippi have slightly larger crops, while California is off a comparable amount from a year earlier.

Grower prices this fall and winter probably will show the usual seasonal advance as the storage season progresses. Reduced processor demand will at least be partly offset by fresh market activity which may reflect the relatively high retail prices prevailing for white potatoes. The U.S. average price received by growers the last quarter of 1974 was \$7.58 per cwt. The prospect this year suggests a price not greatly different.

MUSHROOMS

U.S. mushroom production moved up to 299 million pounds in the 1974/75 season. This was 7 percent greater than a year earlier and a new record high. Pennsylvania alone provided 60 percent of this figure. The average U.S. yield improved to 2.7 pounds per square foot. The U.S. crop was valued at \$147 million at the farm level. With larger supplies, fresh market sales volume rose sharply to 126 million lbs. nearly duplicating the surge in fresh sales which took place last year. Fresh sales accounted for 42 percent of production in 1974. Sales to processors, on the other hand, were down slightly to 173 million lbs., leaving the quantity canned domestically relatively static the past 3 years.

During 1974/75, canned mushroom imports rose about a tenth. This gain more than offset the reduction in the quantity of domestic mushrooms processed. As a result, the supply of canned mushrooms for the third year in a row exceeded 160 million pounds or 0.8 pound per person product weight.

The increased production of mushrooms during 1974/75 was large enough to boost total supply per capita to 1.8 pounds fresh weight equivalent. Since 1967, this figure has increased one-tenth of a pound each year, suggesting that the full market potential for this specialty crop has yet to be reached.

U.S. growers intend to increase production area in 1975/76 by 6 percent. This would amount to 117 million square feet devoted to the crop. With renewed demand for canned mushrooms along with a strong market for fresh, grower prices are likely to be at least as high or slightly higher than a year earlier. The degree to which takes place will depend in some measure on the extent of economic recovery and import activity this winter.

DRY EDIBLE BEANS

MORE PINTO BEANS, FEWER WHITES

Across the United States, production of dry edible beans is indicated at 18.3 million cwt, a 12 percent drop from 1974, although still 12 percent greater than 2 years ago.

Production of dry beans is up in those States which experienced higher-than-usual prices in 1974/75. By class, most of this gain in tonnage is probably pinto. Combined Colorado, Idaho, and North Dakota acreage harvested is 14 percent above 1974. For these three

States a production level 19 percent above last year was reached. North Dakota scored the most impressive return to normal yields, after last year's untimely frost.

Sharp acreage cuts were made in those States producing white classes (navies, small whites, great northern). Prices throughout 1974/75 were at what growers thought inadequate to justify any other course of action.

Market prospects for dry beans are just opposite from a year ago. This year white classes are in shorter supply, and the higher prices reflect this. Early in the season, Michigan pea bean prices approached \$40 per cwt. This was nearly 3 times the low point of early 1975 when a large supply depressed the market. Since September these prices have weakened. On the other hand, colored classes—pintos, in particular—are in bigger supply. Prices have dropped substantially since mid-August, when it appeared that Mexican import requirements for 1975/76 were likely to be minimal. Last season, Mexico bought aggressively. As of late October, Mexican interest this year has been limited to casual inquiry.

In the 1974/75 crop year, a record 5.1 million cwt of beans were exported, with Mexico, the U.K., Japan, and Algeria the leading customers. For the current marketing season with its smaller total supply, export volume is not likely to repeat the performance of last season. Nonetheless, a reduced Ontario crop suggests some opportunity for Michigan shippers to move a substantial quantity to the U.K.

Average prices to U.S. growers will be higher in 1975/76.

OUTLOOK FOR TIMBER PRODUCTS

[By Robert B. Phelps, Forest Economics and Marketing Division, USDA]

The demand for timber products is largely determined by the levels of activity in several important end-use markets. So, before discussing demand for the various products, I would like to briefly review trends in the economic situation affecting these markets and take a look at current estimates of their strength this year and early in 1976.

DOMESTIC MARKETS

A key determinant in the demand for many timber products is construction activity, and most particularly, residential construction activity. As most of you know, housing is the Nation's most important market for softwood lumber and plywood, and a major consumer of many other timber products such as hardwood, plywood, particleboard, and insulation board. And not only is it a key direct consumer of wood, but it provides the stimulus, with a suitable lag, for homeowner purchase of many manufactured goods, including, for example, small and large electrical appliances, and of most importance to the timber industry, household furniture. Household furniture production, of course, is a major manufacturing use of hardwood lumber, plywood and veneer, hardboard and particleboard. Its shipment, along with the other manufactured goods, stimulates the demand for wood pallets and skids (another major hardwood market) and for shipping containers of all types including those made from paper and board. Thus, demand for pulpwood tends to increase. Now, I don't want to leave the impression that improvement in the demand situation for all timber products depends on improvement in housing. However, to a very large degree, strength in housing does mean strength in demand for timber.

In 1974, starts of new housing units dropped to 1.35 million units. This was a third less than in 1973 and the smallest yearly total since 1967. The steepest declines came in the last months of the year. In December, the seasonally adjusted rate for housing starts dropped to 880 thousand units, the lowest rate in over 8 years. Since that time, however, housing construction has been slowly improving. Preliminary data indicate that the seasonally adjusted annual rate of new housing starts in September was just under one and a quarter million units. Although this was slightly below the August rate, it represented an increase of some 40 percent since the December low.

Shipments of mobile homes, a type of dwelling that many families have turned to in recent years as housing costs have increased, were also sharply down in 1974, again with much of the decline coming in the latter months of the year. Through the first half of 1975, shipments fluctuated but showed little tendency to rise. However, since

mid-year, shipments have increased, and in August the seasonally adjusted annual rate was 235 thousand units, still far below 1974 but a fifth larger than the January rate.

The number of building permits issued, an indicator of future housing starts, has also been rising in 1975. The September seasonally adjusted annual rate was almost 1.1 million units, up 8 percent from August and nearly 60 percent above the rate in March. It was also the highest rate for any month in well over a year.

Despite the generally upward trends, there have been recent indications that housing construction activity may continue to rise only slowly in late 1975 and early 1976. In late summer, interest rates were again moving up and causing some outflows of funds from the principal mortgage institutions. In addition, prices of new houses were continuing to rise. On the other hand, the recently announced resumption of Federal low cost housing programs, coupled with other programs, should act to encourage increased activity in the months ahead.

Based on trends for the year and on the various factors discussed above, most analysts estimate that total housing starts will be under 1.2 million units in 1975, with an increase to about 1.5 million in 1976. Much of the improvement next year will probably come in the second half. Shipments of mobile homes, expected to total about 230 thousand units in 1975 if current trends continue, should also increase, rising to over 300 thousand units in 1976 according to industry estimates.

Expenditures for residential upkeep and improvements have been rising sharply early in 1974 as many homeowners apparently met their needs for additional space by alterations and remodeling rather than purchase of new homes. Expenditures in the second quarter of the year were at a seasonally adjusted annual rate of \$24.1 billion, some 5 percent above the first quarter expenditure level, and 22 percent more than in the second quarter a year ago. This upward trend can probably be expected to continue.

In contrast to housing, activity in most types of private nonresidential construction has been declining in 1975. Expenditures for nonresidential buildings, especially office and other commercial buildings, have shown an especially large drop since early in the year. In late summer, surveys of business spending plans indicated that additional declines were in prospect for the last quarter of the year. High interest rates, scarcity of money, unused plant capacity, and increasing construction costs may well continue to adversely affect these sectors during most of 1976.

Construction financed by Federal, State, and local governments has also trended down in 1975; however, the decline has been somewhat slower than for private construction, and there have been rather large month-to-month fluctuations. Some analysts feel that many types of public construction may also continue down in 1976 as some governments across the Nation seek ways to cut expenditures.

Production of furniture and fixtures—an important market for hardwood lumber, plywood and veneer, particleboard and hardboard—has been up somewhat in recent months after dropping sharply in late 1974 and early 1975. However, even with some increase late in the year, production for all of 1975 will be far under the 1974 level. The reversal of the downtrend in furniture and fixtures output was pre-

sumably, in part, due to the change in housing construction. Thus, the outlook for housing indicates a possible further rise in the months ahead.

Industrial production—an important indicator of the demand for pallet lumber, container board, and some grades of paper—continued down in early 1975. However, since spring total output (as measured by the Federal Reserve Index) has been rising with particularly rapid increases in the third quarter. Most economists now feel that the 13.5 percent annual rate attained in that quarter cannot be sustained in the months ahead. However, they do expect output to continue upward through 1976.

As would be expected, container production—a major market for paperboard, veneer, hardboard, and some grades of lumber and plywood—has been rising as industrial output has grown. Trends in the other industrial groupings have been somewhat mixed but nearly all have increased. In contrast, demand for railroad ties is likely to be severely depressed through the first part of 1976 because of sharply reduced or suspended track maintenance programs.

INTERNATIONAL MARKETS

The United States is the world's leading importer of timber products—chiefly lumber, woodpulp and paper and board from Canada and veneer and plywood from Southeast Asia. The total value of these imports in 1974 was \$4.7 billion or about 5 percent of the value of all U.S. imports. In terms of roundwood equivalent, about a fifth of our apparent consumption of timber products have been imported in most recent years.

The United States is also a major timber products exporter. In 1974, the total value of timber product exports was almost \$4.2 billion, about 4 percent of the U.S. total. Although we ship a variety of wood products to many countries, our principal export markets are Japan for softwood logs and lumber, pulp chips, and pulp and paper products, and Western Europe for wood pulp and paper and board products and smaller amounts of lumber and plywood.

Although international demand for U.S. timber products grew rapidly in the early 1970's, it declined sharply in 1974 and early 1975 as economic conditions slowed in the principal importing areas. In the Western European countries and in Japan, housing construction as well as consumer demand fell. In both areas, timber product inventories rose to relatively high levels. It now appears, however, that the economic recession in most of these countries reached bottom during 1975 and if continued measures to improve economic conditions are successful, especially in the construction sectors, and slackening in the growth rate of inflation is accomplished, demand for U.S. timber products should begin to rise again. Nevertheless, any improvements are expected to be slow. For example, Japanese authorities estimate housing construction in 1975 to be about 4 percent below 1974 levels, with some improvement expected in 1976.

SOFTWOOD LUMBER

In response to declining markets, rising inventories, and some mill closings and production curtailments, softwood lumber production

dropped sharply in late 1974 and early 1975. As a result, production in the last quarter of 1974 and first quarter of 1975 was at the lowest levels in recent years. Although production has been moving up since January, trade association data indicate that output for the first 8 months of the year was still some 14 percent under production for the similar period in 1974. In addition, mill inventories remained at relatively high levels. Nonetheless, if housing and other markets continue to improve, production should show further increases. Based on these trends, 1975 production is estimated at about 26.0 billion board feet, some 7 percent below 1974.

Data from the first half indicate that imports are likely to decline to about 5.4 billion board feet in 1975, a drop of some 20 percent from last year, and only three-fifths as large as in 1973. As has been true in recent years, nearly all of this will come from Canada. Exports are also expected to be down about 20 percent to 1.2 billion board feet.

Consumption of softwood lumber has followed the trends in production—that is, very low levels early in the year followed by a slowly rising trend through August. Some further increase is likely if housing continues to move up. Based on the estimates of production, imports, and exports discussed above, apparent consumption for 1975 (i.e., production plus imports minus exports) is estimated at 30.2 billion board feet—about 9 percent under 1974 and a fifth less than 1972 and 1973 when housing construction was at a peak. If housing output reaches 1.5 million units and the other markets show some improvement in 1976, consumption is likely to rise above 1975 and reach the highest level since 1973.

Softwood lumber prices, which had dropped rapidly in late 1974, rose somewhat in early 1975, presumably in response to such factors as restrictions in production caused by falling demand for pulp chips, expectation of improvement in housing, and normal seasonal pickups in orders. Since May, however, prices have trended down again and were very near year earlier levels in September. The relative wholesale price index for softwood lumber (a measure of its price relative to all other wholesale commodities) was 115.7 (1967=100) in September. This was 27 percent below 1973 and very near relative price levels early in 1971. Data from trade sources show some additional declines in October. A return to somewhat higher prices is likely when more rapid increases in housing production are seen.

HARDWOOD LUMBER

Although activity has been slowly increasing in some of its major markets, notably furniture and pallets, production of hardwood lumber through the first 8 months of the year was still a fifth under output in the first 8 months of 1974. Production has been rising since January, however, and the expected further increases in the demand for furniture and pallets suggests that there is a likelihood of some further increases in the remainder of the year. Nevertheless, because of the extremely low first half, production is expected to reach only about 5.8 billion board feet, 16 percent under 1974.

Imports during the first two quarters of 1975 were also much below 1974. Some pickup is likely in the last half; however, the total for the year is estimated at 200 million board feet, less than half the vol-

ume attained in 1974. First half data also showed that exports were down and the year's total is expected to be close to 150 million board feet.

Apparent consumption of hardwood lumber in 1975, based on the estimates of production and trade given above, should amount to slightly more than 5.8 billion board feet, about 19 percent below 1974. According to estimates published by the National Forest Products Association, actual consumption is likely to be somewhat lower because of sharply increased inventories. Continued growth in the hardwood lumber markets pointed out earlier, suggests further increase in demand in 1976, although it is unlikely that consumption will rise to the 1974 level before 1977.

In contrast to softwoods, hardwood lumber prices, as measured by the Wholesale Price Index, have been slowly rising in recent weeks, probably in response to the continuing slow rise in demand as outlined above. Nevertheless, prices in September were still somewhat below January and about 14 percent under year earlier levels. The September relative index was almost a fifth below September 1974, and very near the index in the early 1960's. If demand continues to improve as outlined above, prices may well continue to rise late this year and in 1976.

SOFTWOOD PLYWOOD

According to data published by the American Plywood Association, total production of softwood plywood in the first 8 months of 1975 was 10.7 billion square feet ($\frac{3}{8}$ -inch basis). Although this is nearly 8.5 percent under the first 8 months of 1974, production dropped rapidly during the latter months of that year, while current trends in output and the outlook in the major markets indicate the likelihood of some further increase for the remainder of this year. Therefore, total production for 1975 is estimated at 15.6 billion square feet, about 2 percent under the 15.9 billion produced in 1974.

Exports of softwood plywood, which have been slowly rising in recent years, are expected to drop over a third to about 0.3 billion square feet in response to declining international markets. Imports will probably remain relatively insignificant.

Apparent consumption in 1975 is therefore estimated at 15.3 billion square feet, about one percent under 1974. Consumption has been slowly rising in recent months as the new housing, maintenance and improvement, and important manufacturing markets improved. A continuation of these trends in 1976 would likely cause demand for softwood plywood to rise to the highest level since 1973.

The wholesale price index indicates that softwood plywood prices have followed the same general trends as softwood lumber; that is, declines in late 1974, rapid increases early in 1975, and some drop since spring. The relative index has also declined, reaching 114.2 in September. This was 21 percent under average relative prices in 1973 when demand was at much higher levels and little different from relative prices in the early 1960's. Data from trade sources show some additional small declines in October. If demand increases in the major market areas, as outlined above, an increase in both current and relative prices can be expected in 1976.

HARDWOOD PLYWOOD

Hardwood plywood production, which dropped sharply in 1974 in response to declining housing and manufacturing output, remained at low levels in early 1975. However, the slowly rising trends in these important markets suggests some improvement in the summer and early fall. Based on these trends, production for the year is estimated at about 1.6 billion square feet ($\frac{3}{8}$ -inch basis), very near output in 1974.

Data for the first half of 1975 indicate that imports are likely to show a small increase to about 1.7 billion square feet. Exports are expected to remain at the 1974 level of 0.1 billion.

Given these trends in production and trade, apparent consumption of hardwood plywood in 1975 is estimated at 3.2 billion square feet—about one percent above 1974. Increased consumption can be expected in 1976 if activity in housing starts, mobile home output, and furniture production continues up.

Hardwood plywood prices, historically much less volatile than those for softwood plywood, exhibited a small increase between the first and second quarters of this year. However, since that time, there has been no change in the wholesale price of 119.1 (1967=100). The relative price index in September was 67.0, very probably at an all time low. Some increases in both current and relative prices can be expected in 1976 as demand in the major markets increase.

PARTICLEBOARD

Association estimates indicate that particleboard production in 1975 will be down about 22 percent to 2.4 billion square feet ($\frac{3}{4}$ -inch basis). Data for the first half of the year suggest that exports are likely to remain unchanged at 0.1 billion square feet. Imports are relatively insignificant. Consumption is thus estimated at 2.3 billion square feet, also 22 percent below 1974. These declines are primarily a reflection of the situation in housing—the market for large volumes of particleboard used for underlayment under carpeting and for subflooring in mobile homes—and in furniture manufacture. Expected increases in these markets and in other manufacturing should stimulate demand in 1976. Particleboard prices might also be expected to increase from their current low levels as demand rises.

HARDBOARD AND INSULATION BOARD

Hardboard production in 1975 is estimated at about 1.7 million tons (5.5 billion square feet, $\frac{1}{8}$ -inch basis), 10 percent under 1974. Imports are expected to drop sharply to 0.1 million tons, while exports decline to under 0.1 million. Consumption with these estimates of production and trade would amount to 1.8 million tons (5.8 billion square feet, $\frac{1}{8}$ -inch basis), down 15 percent from 1974.

Data for the first half of 1975 indicate that insulation board production for the year will total about 1.1 million tons (2.3 billion square feet, $\frac{1}{2}$ -inch basis)—20 percent lower than in 1974. Imports and exports are expected to be under 0.1 million tons, substantially so in the case of imports. Consumption, therefore, is estimated at 1.1 million tons, some 17 percent under 1974.

If housing and manufacturing output continue up in the months ahead as outlined earlier, both the demand and the price for hardboard and insulation board can be expected to increase.

PULPWOOD

Demand for most grades of pulp, paper, and paperboard dropped sharply in late 1974 and early 1975. Although demand and output have been improving in recent months, data from the American Paper Institute indicate that production in the first three quarters of the year was still much below year-earlier levels. Based on these trends, pulpwood production (roundwood and chips) in 1975 is estimated at 74 million cords, 12 percent below 1974 and the first yearly decline since 1971.

Imports of pulpwood are expected to total about 0.8 million cords and exports approximately 2.3 million. These volumes are, respectively, 14 percent and 23 percent under 1974. The drop in exports reflects a sizable decline in chip exports, primarily to Japan.

Pulpwood consumption in 1975, given the above estimates of production and trade, amounts to about 72.5 million cords, some 12 percent below 1974. Current and prospective increases in economic activity suggest that the upward trends in pulpwood production and consumption will be resumed in 1976.

SOFTWOOD LOGS

Softwood log exports through the first 8 months of 1975 amounted to about 1.7 billion board feet, the bulk of these shipments going to Japan. Economic conditions in that country, particularly in the housing industry, suggest that the level of demand is not likely to increase appreciably in the last months of the year. Exports for 1975 have therefore been estimated at 2.5 billion board feet—about the same as shipments in 1974. Some increase in 1976 is probable. Imports of softwood logs have been declining in recent years and are not expected to be significant in 1975 or 1976.

HARDWOOD LOGS

Hardwood log exports, which have been rising slowly in most recent years, are likely to drop to about 0.1 billion board feet in 1975 and 1976. Although the volume involved is small, most of the hardwood log exports in recent years have been composed of walnut and other preferred species that are in short supply in the United States. These exports have thus been an important contributing factor to the large increases in stumpage and log prices for some species.

Hardwood log imports have been dropping rather steadily since the mid-1950's. This trend seems likely to continue in 1975 and 1976, and exports are expected to be somewhat below 0.1 billion board feet.

SUMMARY

Given the trends in consumption, trade, and production for the various products discussed earlier, U.S. production of industrial roundwood products (i.e., the round timber equivalent of all products except fuelwood) is expected to drop to about 10.2 billion cubic feet in 1975. At this level, total timber products output would be about 10 percent below 1974 and the smallest volume in over a decade.

Total imports, including the pulpwood equivalent of pulp, paper and board, is likely to decline to about 2.2 billion cubic feet, 18 percent under 1974. Exports are expected to be down some 14 percent to about 1.3 billion. For both imports and exports, these are the lowest totals since 1970 and 1971, respectively.

With these levels of production and trade, total apparent consumption would be 11.1 billion cubic feet, the smallest amount of industrial wood products consumed since 1963 and about 17 percent under 1973 when apparent consumption reached record levels.

Some increase in consumption, imports, exports, and production can probably be expected in 1976. Of course, housing activity will be of particular importance. If general economic conditions continue to improve, new housing starts reach the 1.5 to 1.6 million unit level, and mobile home, furniture and other industrial production continue up, consumption, trade, and production will likely rise again to about 1974 levels.

Despite the expected slow recovery in many of the major timber product markets, the longer run outlook is one of fairly rapid growth. The demand for housing, for example, is expected to be near 2.5 million units in the latter part of this decade—more than a million units above current levels. Projected growth in population and income also suggests greatly increased demand for furniture, pallets, containers, and nonresidential construction.

OUTLOOK FOR TOBACCO

[By Robert H. Miller, Commodity Economics Division, Economic Research Service, USDA]

The outlook for 1976 is highlighted by increasing tobacco supplies both in the United States and overseas. Prospects are for U.S. cigarette consumption to rise further from this year's record-high level but our leaf exports will do well to hold near recent high levels. The larger U.S. crop this season means an increase in our carryover stocks. Next year's tobacco quotas will probably hold the crop size to no more than this season's level. Cash receipts may gain as support prices rise, reflecting increased production expenses.

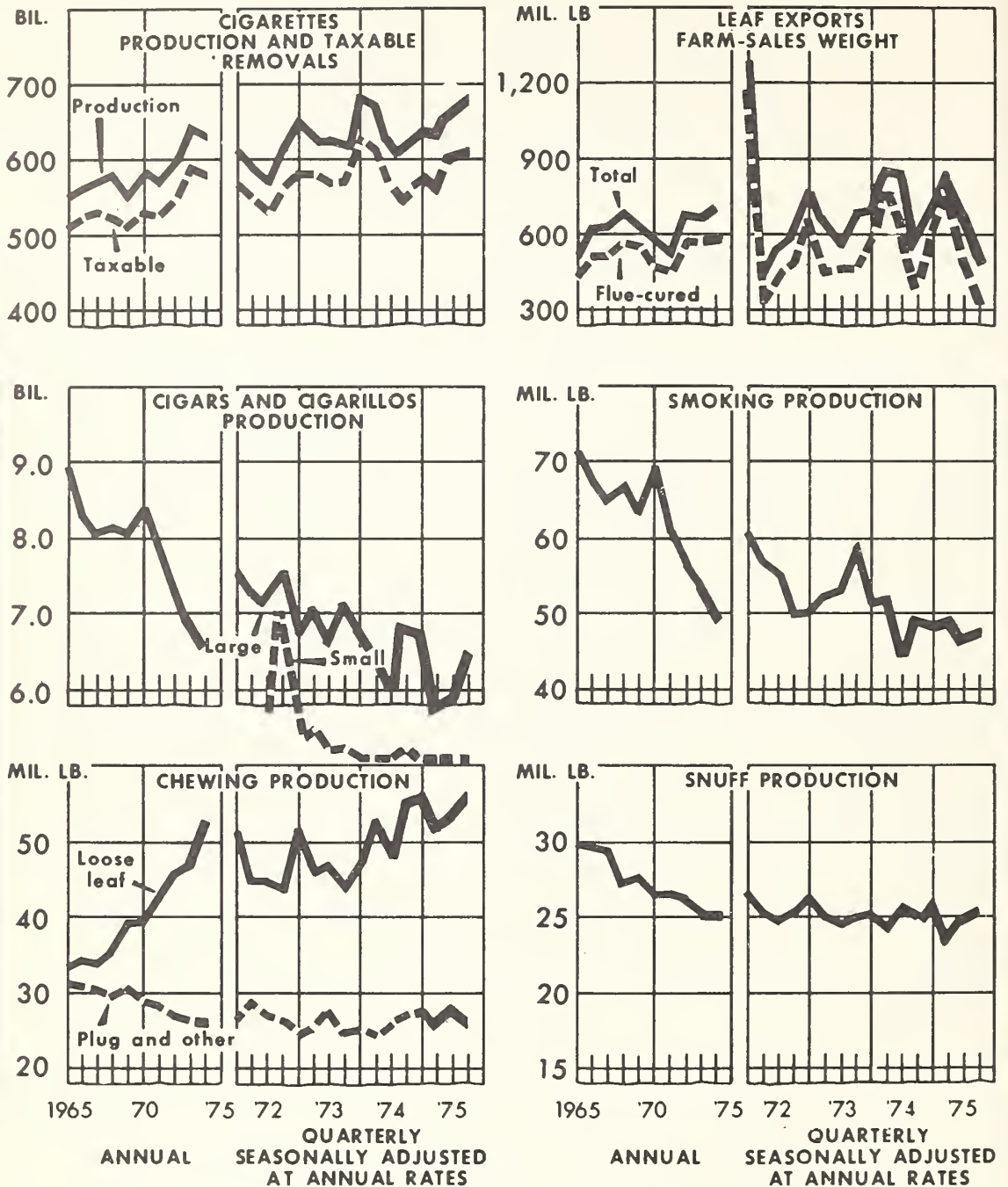
TOBACCO PRODUCTS

Cigarettes take four-fifths of the tobacco used in the United States and account for an even higher share of our exports. U.S. cigarette output should reach a record 655 billion cigarettes this year, 3 percent above 1974. The number of cigarettes consumed per person, 18 years and over, in 1975, is staying about the same as last year when 4,148 cigarettes (208 packs) were used. Per capita use was held down by the recession earlier this year, but next year as real incomes gain, U.S. smokers may smoke a few more per capita than in 1975. However, consumption per person is not likely to regain the record of 4,345 cigarettes set in 1963 for at least several years.

Retail cigarette prices are averaging 7 percent higher in 1975, due to increases in manufacturers' prices and in wholesale-retail margins. But the hike for cigarettes is less than the rise in consumer prices generally. This year three States raised their cigarette taxes, but the overall average has virtually stabilized. Despite a decline in the overall inflation rate, further cigarette price increases are likely. There are more people of smoking age and antismoking publicity remains at a moderate level. In the past few years several States and cities have enacted laws and ordinances that limit smoking in public places. But the effect on smoking incidence is probably negligible.

TOBACCO OUTLETS

Trends in Manufactured Products and Exports



LAST QUARTER SHOWN ESTIMATED.

USDA

NEG. ERS 229 - 75 (9)

Consumption of large cigars in 1975 is totaling about 6 billion, 3 percent below 1974 and one-third below the 1964 peak. Consumption per male 18 years and over is about 85 large cigars, 7 percent below 1974.

The downtrend suggests younger smokers are not as attracted to cigars as in years past. Small cigar output may equal the 3.1 billion total of 1974. Next year consumption of large cigars may drop further while small cigars may stay about the same.

Smoking tobacco output in 1975 is down 4 percent to an estimated 47 million pounds, a record low. Snuff output is down slightly. Continuing the trends, further declines for these products are expected next year. By contrast, chewing tobacco output probably reached 81 million pounds this year, 2 percent more than 1974's level.

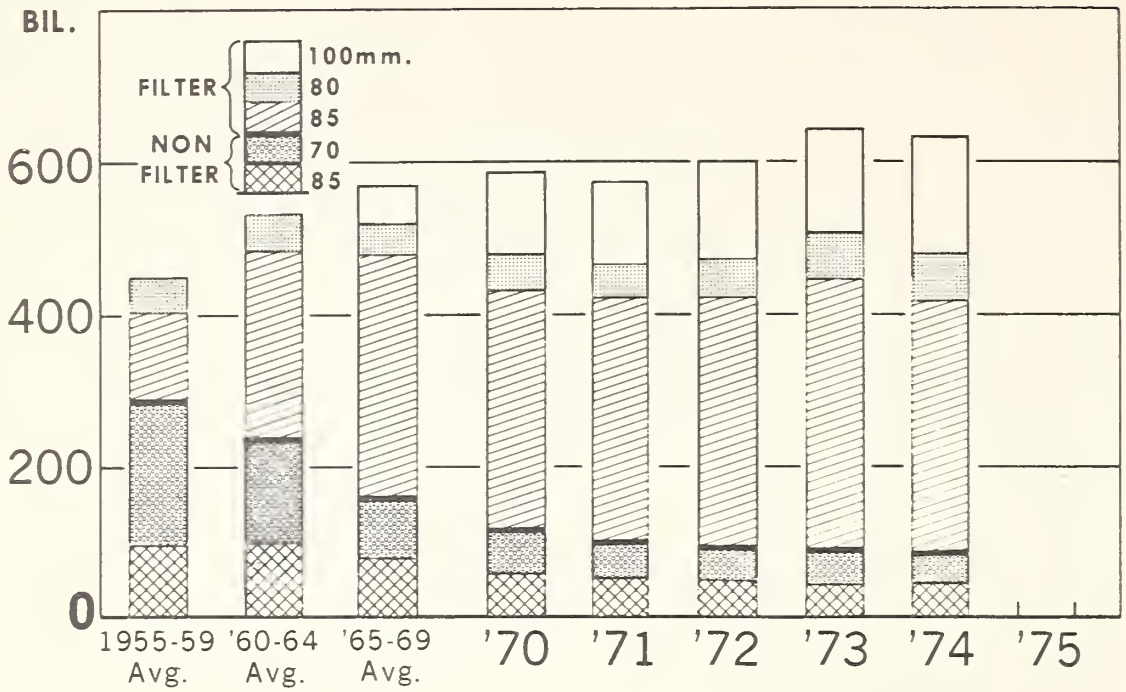
FOREIGN TRADE

U.S. exports of tobacco and tobacco products in 1975 are gaining a little from last year's record high value to around \$1.25 billion. Volume is down but average value is up. Value of both unmanufactured tobacco and tobacco products exports may exceed last year's record highs, \$832 million and \$360 million, respectively. In recent years leaf and product exports have taken about four-tenths of the U.S. tobacco crop. This year U.S. tobacco exports will register nearly a \$1 billion surplus over tobacco imports for consumption of about \$300 million. This favorable tobacco trade balance along with the high level of sales for other agricultural products is helping offset the country's trade deficit in nonagricultural products.

Unmanufactured tobacco exports in 1975 are expected to total 575 million pounds (630 million, farm-sales weight), about 10 percent below 1974. Larger production overseas and increased stocks curtailed the 1975 total. World cigarette production has been increasing around 3-4 percent annually and the preference for light cigarettes containing flue-cured and burley tobaccos has increased sharply. But U.S. price levels will hold exports in 1976 to near recent levels. In our major market, the European Community, takings of U.S. tobacco trail 1974. Less is going to West Germany and the United Kingdom. Purchases by Japan and Italy have been on the upswing.

World tobacco output this year is expected to total slightly above the 11.4 billion pounds produced in 1974 as output in the United States is up. Foreign production of flue-cured tobacco States may have risen slightly in 1975. Increases occurred in Brazil, Rhodesia, and Philippines. Declines were registered in India, Canada, and Japan. Rhodesia was our major overseas competitor before 1965, but continued U.N. sanctions and unstable political conditions are holding down Rhodesia's exports. World production of burley is up in 1975, in part due to the gain in the U.S. crop. Output may have again stabilized in Italy, the largest producer outside the United States. In Korea, another leading producer, estimated output increased.

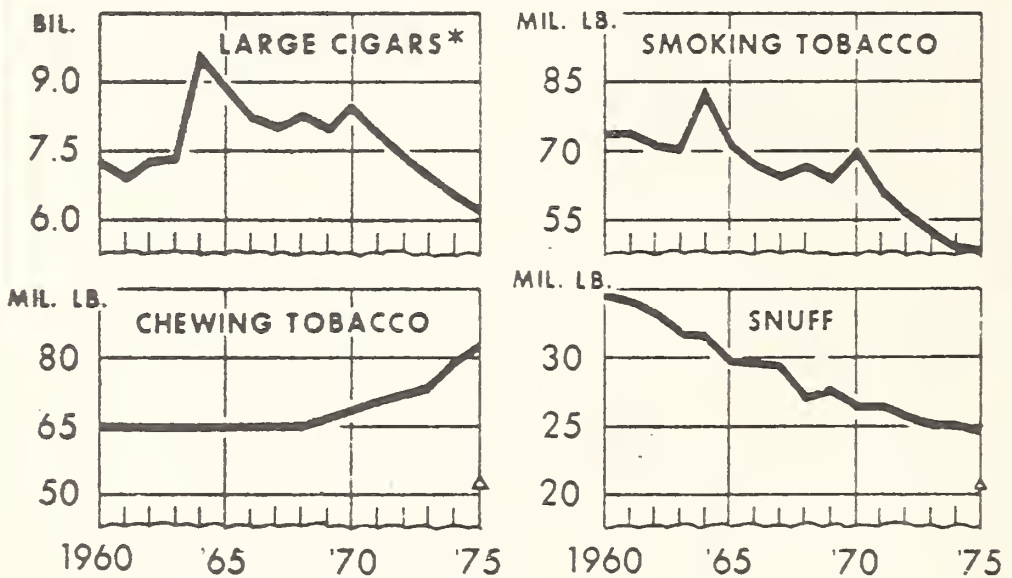
CIGARETTE OUTPUT BY KIND AND SIZE



USDA

NEG. ERS 660-75 (3)

U.S. OUTPUT OF TOBACCO PRODUCTS



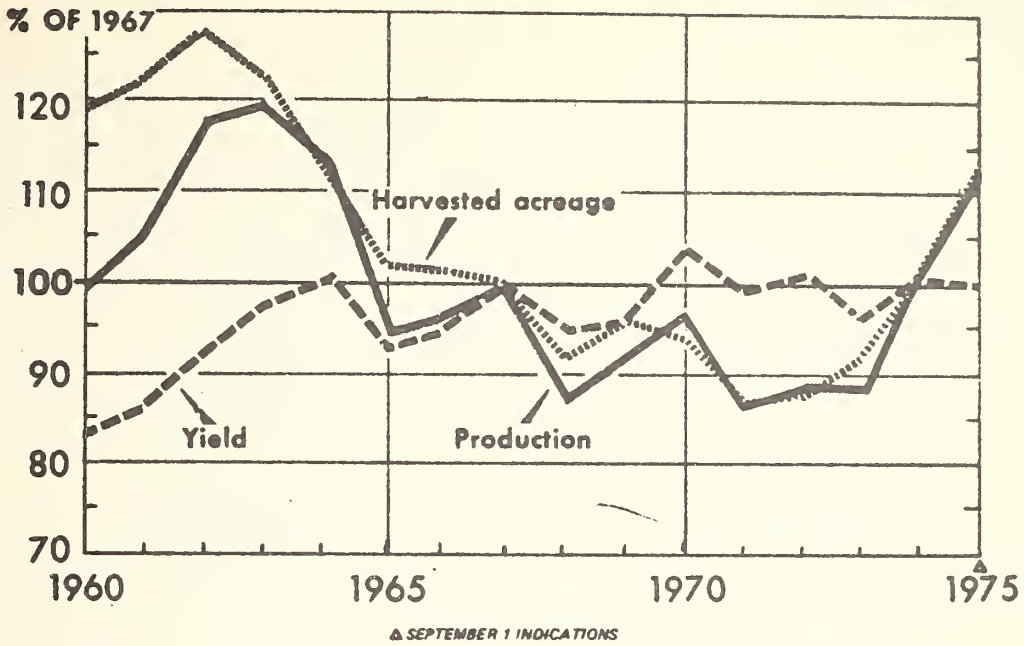
* PRODUCED IN MAINLAND FACTORIES AND RECEIVED FROM PUERTO RICO.

▲ ESTIMATED.

USDA

NEG. ERS 1989-75 (9)

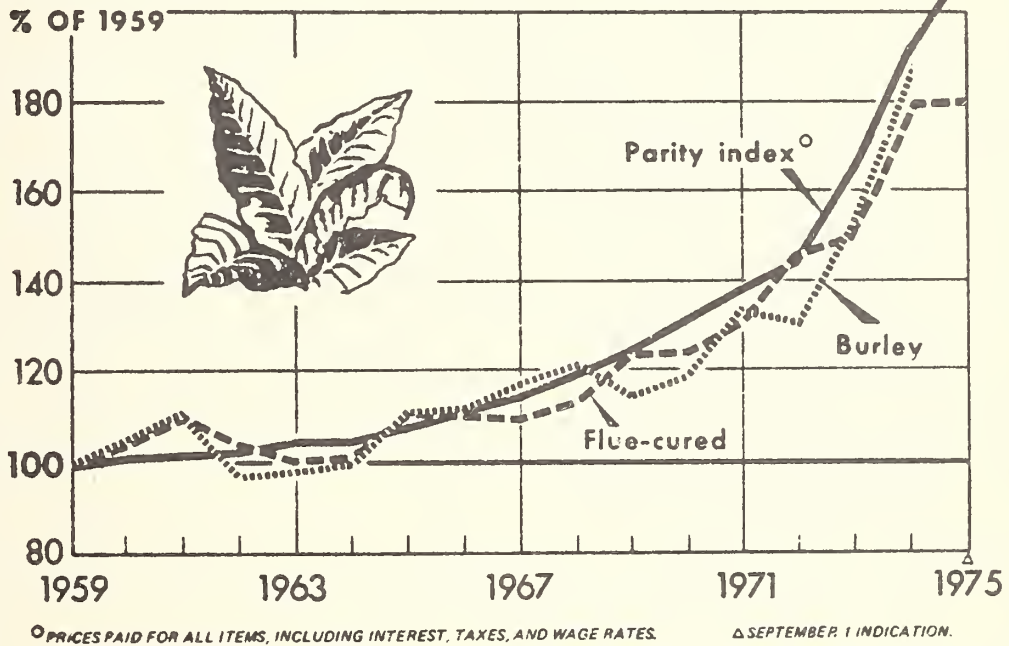
TOBACCO ACREAGE, YIELD, AND PRODUCTION



USDA

NEG. ERS 8140-75 (9)

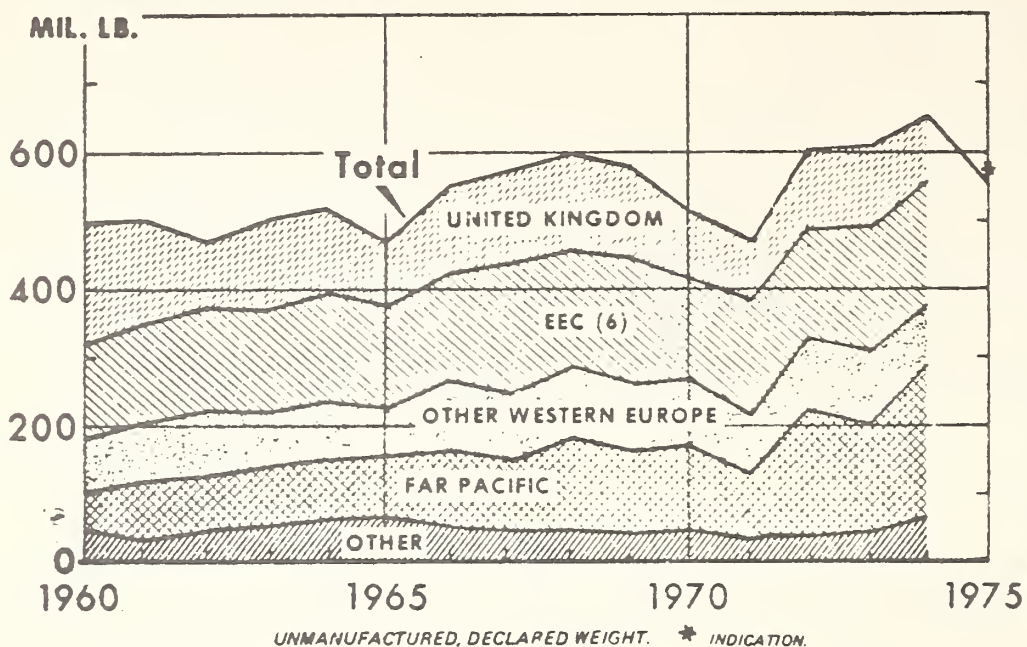
TOBACCO PRICES AND PARITY INDEX



USDA

NEG. ERS 782-75 (9)

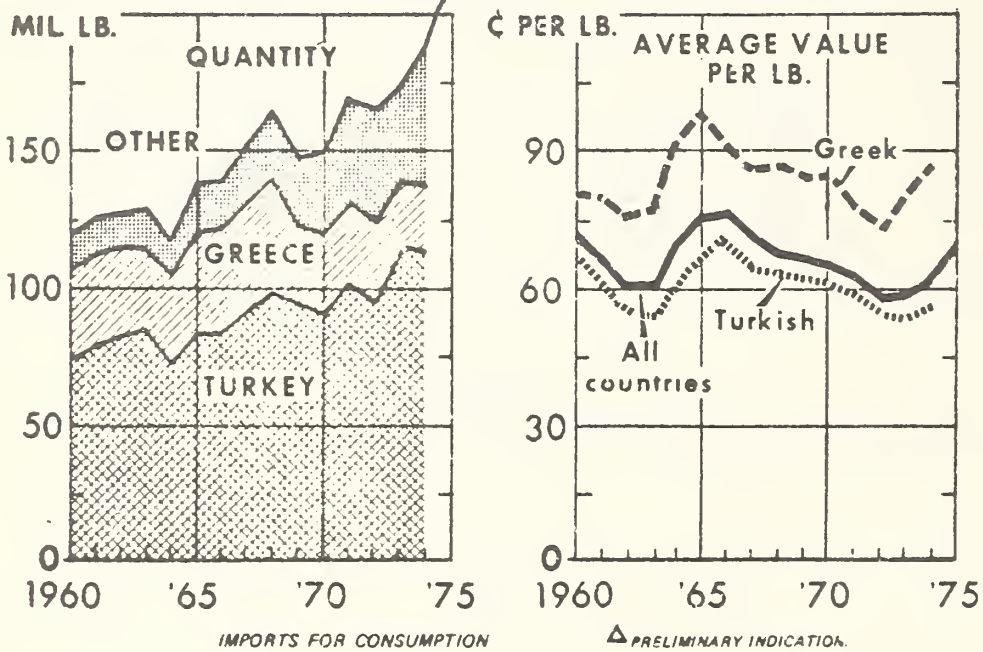
EXPORT MARKETS FOR U. S. TOBACCO



USDA

NEG. ERS 938 - 75 481

U. S. IMPORTS OF CIGARETTE TOBACCO



USDA

NEG. ERS 924 - 75 (7)

Imports accounted for about 22 percent of U.S. manufacturers' tobacco utilization last marketing year (20 percent of use for cigarettes and 75 percent for cigars). Cigarette leaf (oriental) is the principal kind of import. Cigarette tobacco imports for consumption (factory use) this year may gain one-sixth to around 260 million pounds. This quantity includes 30 million pounds of scrap and about 45 million pounds of flue-cured and burley leaf.

Cigar tobacco imports are mainly filler tobacco, including scrap. The Philippines and Brazil are our leading sources. For this year imports will probably total 75 million pounds (for consumption), about the same as a year earlier. This high level will probably continue due to large stocks of foreign tobacco in the United States, requirements for low cost, neutral tobacco for blending, and shortages of certain grades and qualities in domestic tobaccos.

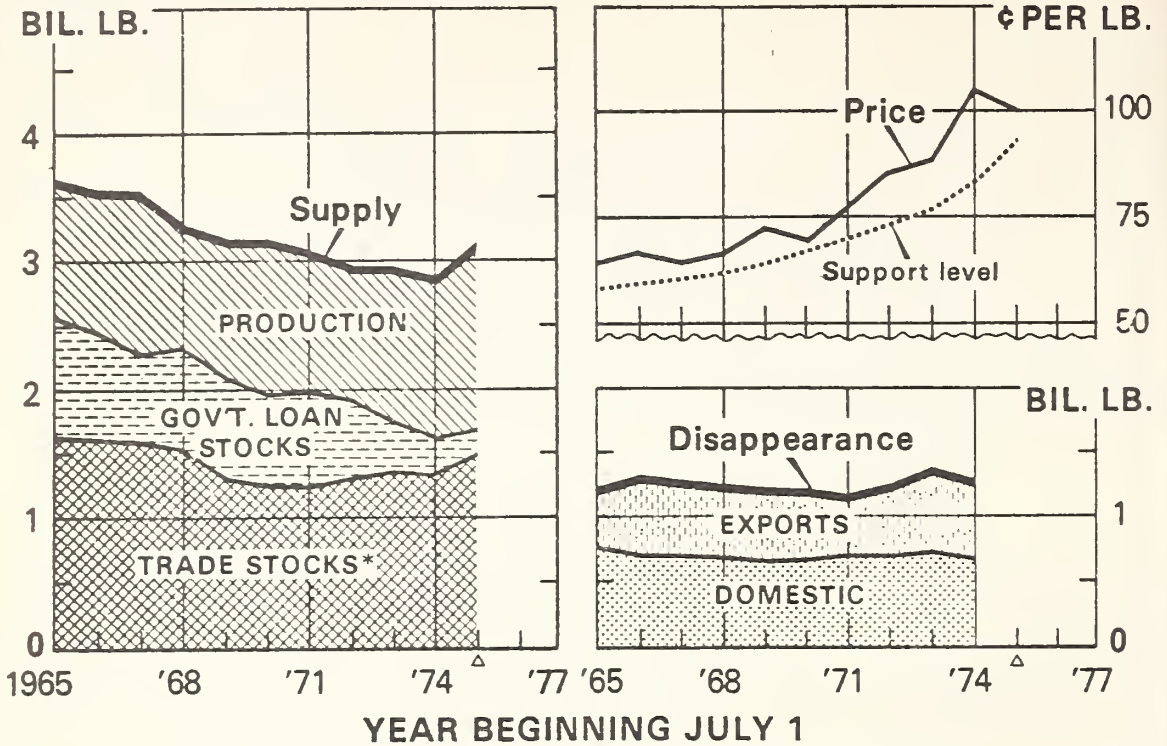
LEAF TOBACCO

The most notable developments for U.S. producers in 1975 were increased production and the break in the upward price trend. With a slowdown in utilization, demand at flue-cured auctions weakened and loan holdings increased. Still, another record high crop value is in prospect. For next year growers may produce about the same tobacco volume. Price support levels will rise, so growers should receive prices above the 1975 season's levels. Cash receipts may gain from this marketing year's total of about \$2.3 billion. Production costs are expected to continue upward.

All tobacco production is forecast 10 percent more this season. Adding the slightly higher carryover, total supplies for the 1975/76 marketing year rose 5 percent. With a weaker auction demand, flue-cured tobacco prices averaged 5 percent below 1974's record high. Burley markets open November 24 and may stay close to last season's record of almost \$1.14 per pound.

At the beginning of the 1975/76 marketing year tobacco held under government loan totaled 200 million pounds (farm-sales weight) or about half the year-earlier level. The large volume of loan tobacco from this season's flue-cured crop means that by the end of this marketing year, total loan stocks on hand will rise sharply but still represent just over a tenth of carryout stocks.

FLUE-CURED TOBACCO: SUPPLY, PRICE, USE



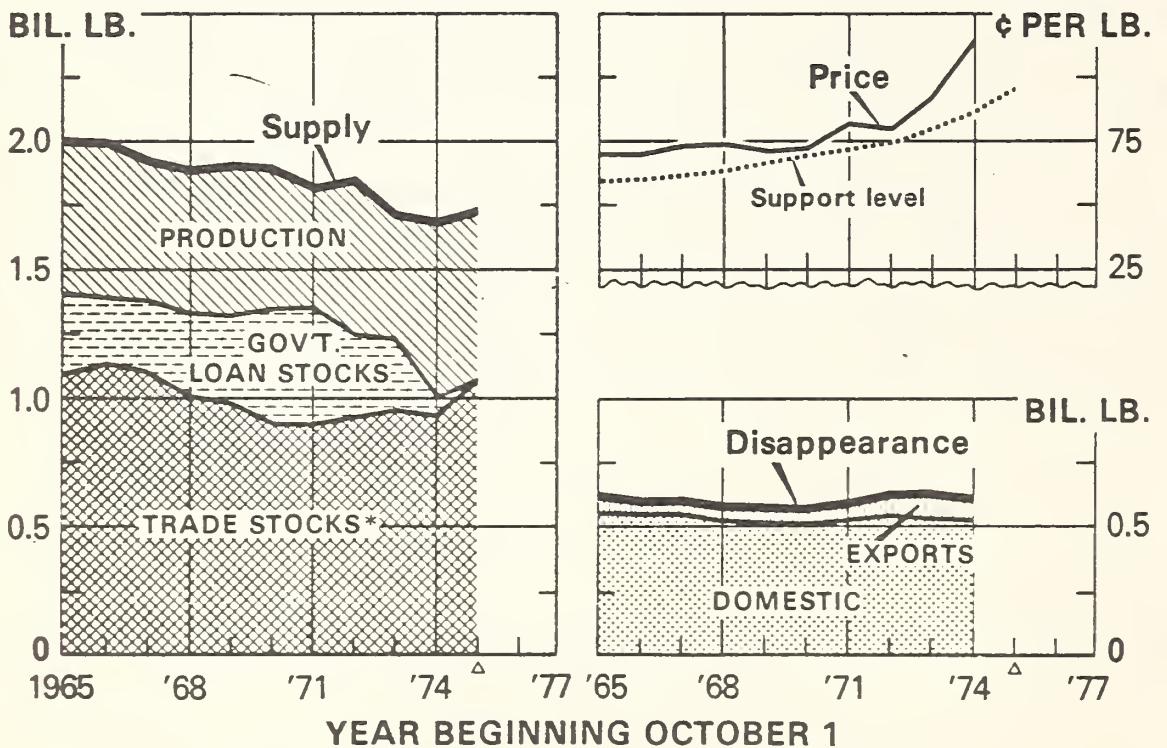
USDA

* MANUFACTURERS' AND DEALERS'.

Δ SEPTEMBER 1 INDICATION.

NEG. ERS 223-75 (9)

BURLEY TOBACCO: SUPPLY, PRICE, USE



USDA

* MANUFACTURERS' AND DEALERS'.

Δ SEPTEMBER 1 INDICATION.

NEG. ERS 381-75 (9)

Government price support is mandatory for tobacco produced under marketing quotas. The legal formula requires that price support levels for eligible tobaccos go up about 13½ percent next year over 1975. The increase results from a rise in the parity index (a measure of changes in prices paid by farmers, including wages paid to hired labor, interest, and taxes). The rate of increase for production inputs has slackened and next season, input supplies may be more plentiful. With inflation at a high rate, the Congress made several unsuccessful attempts over the past 12 months to raise tobacco price supports by changing the legal formula.

For flue-cured tobacco, the larger crop and increased carryover means 1975/76 supply is up 8 percent. This season, USDA increased the flue-cured quota 15 percent to rebuild stocks. Growers are selling about 14 percent more than in 1974. Acreage increased, but average yield per acre fell slightly.

The 1975 flue-cured auction season has just ended with an average of \$1.00 per pound, 5 cents below the previous year. Quality was off; the larger supply pushed prices down for several groupings such as lugs and primings, but better leaf grades sold for the same or higher prices. Growers placed 18 percent of sales under Government loan, the highest percentage and quantity since 1967.

Last marketing year, exports of flue-cured (over four-fifths of total U.S. tobacco exports) fell back when foreign tobacco became available and cigarette manufacturers worked off stocks; the overall decrease was 8 percent. U.S. exports during July–September 1975 were down, in part due to larger overseas crops and the sharp jump in the 1974 season prices. Cigarette output is gaining and domestic use may gain. Disappearance this marketing year may gain a little from the 1974/75 level, but the large crop will still raise carryover some 165 million pounds by next July.

For 1976, under the acreage-poundage program, USDA has announced the national flue-cured marketing quota of 1,268 million pounds. This 15-percent reduction was made to maintain supplies in line with demand. Adding 1975's estimated net undermarketing gives an effective quota of 1,423 million pounds, 10 percent below last season's level.

The 1975/76 supply of burley tobacco is 3 percent above last season. Carryover on October 1 was up slightly. This year's crop is up 4 percent as larger acreage more than offset reduced yield.

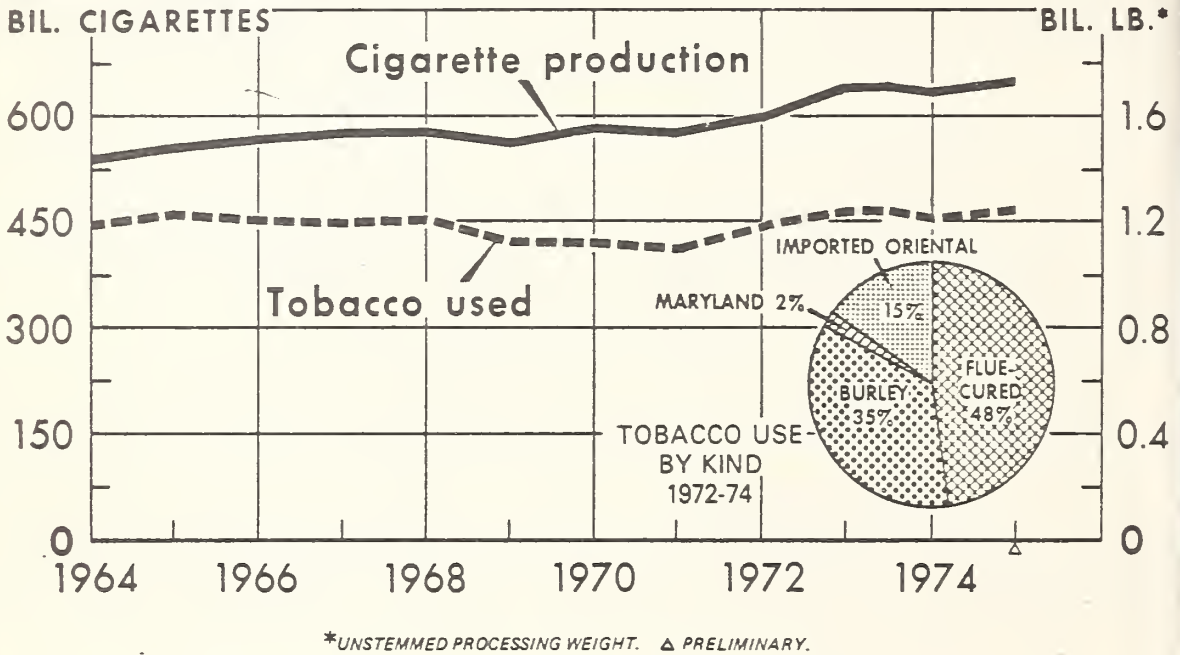
Burley disappearance fell in 1974/75 when short supplies reduced exports. Domestic burley disappearance may gain with larger available supplies and further growth in cigarette output. Carryover stocks next October 1 will likely change little.

Burley poundage legislation requires that the national quota be not less than 95 percent of estimated disappearance for that year. With disappearance around the 605 million pounds of the past 3 years and a need to rebuild stocks, USDA may keep the 1976 burley marketing quota near this season's 667 million pounds. The 1976 farm quota will increase by the indicated undermarketings from this year's quotas.

For other tobaccos, the current marketing year's supplies of fire-cured and cigar binder are above last season, while supplies of Maryland, dark air-cured, cigar filler, and cigar wrapper types are lower.

For several years USDA has suspended quotas on cigar binder (types 51-52) because supplies are below normal as defined in the quota legislation. Since supplies of fire-cured, dark air-cured, and cigar filler and binder remain near the normal supply level, USDA may again have to consider increasing or suspending quotas on those kinds for the 1976 crop.

CIGARETTES: PRODUCTION AND TOBACCO USED



LONG-TERM TRENDS IN TOBACCO CONSUMPTION AND PRODUCTION

[By Richard Hall, Commodity Economics Division, Economic Research Service,
USDA]

Tobacco production was initiated in Colonial America to satisfy the foreign market. By the end of the 19th century, the rise in the population of the United States made our domestic market the major user of our tobacco. Current trends suggest that U.S. growers face increasing competition in both the domestic and foreign markets. At the same time that world production and consumption have been expanding, United States production has been held down. The result has been that our exports have not been keeping pace with exports from other producing nations. Furthermore, the United States, the world's leading exporter of tobacco, ranks third as an importer and has been importing at a faster pace than exporting.

CONSUMPTION TRENDS AS INDICATED BY PRODUCTION TRENDS

Tobacco production for most countries has been estimated annually for decades. Consumption estimates are not available for most countries because few countries publish data on both stocks of unmanufactured tobacco and tobacco products. Therefore we must use long term trends in production and trade to measure consumption trends. Short run variations in stocks cause some error in annual estimates. However, these adjustments are minimized when a longer period of time is analyzed.

By 1974 world tobacco production had expanded 28 percent since the 1960-64 period. We can assume that stocks had increased with expanding production and utilization so that both supply and consumption had increased at about the same rate since 1960-64. On this basis world consumption in 1974 was estimated at 10,620 million pounds, up 18 percent from the 1960-64 average (table 1). Foreign production was up 40 percent as United States production had been held below the 1960-64 average of 2,180 million pounds, U.S. output in 1974 remained 9 percent below the 1960-64 average.

TABLE 1.—TOBACCO: WORLD PRODUCTION AND ESTIMATED CONSUMPTION, 1960-64

[In million pounds]

Period	Production			Consumption ¹		
	United States	Foreign	World	United States ²	Foreign	World total
1960-64 average.....	2,180	6,720	8,900	1,700	7,300	9,000
1965.....	1,870	7,750	9,620	1,720	7,610	9,330
1966.....	1,896	7,740	9,636	1,660	7,800	9,460
1967.....	1,978	8,390	10,368	1,690	7,900	9,590
1968.....	1,723	8,110	9,833	1,650	8,080	9,730
1969.....	1,811	8,010	9,821	1,610	8,280	9,890
1970.....	1,911	8,110	10,021	1,590	8,440	10,030
1971.....	1,705	8,160	9,865	1,660	8,520	10,180
1972.....	1,745	8,410	10,155	1,650	8,680	10,330
1973.....	1,740	8,930	10,670	1,730	8,750	10,480
1974.....	1,987	9,410	11,397	1,700	8,930	10,630

¹ Consumption estimated on the basis of the following conditions: (1) Beginning stocks of 16,500,000, pounds in 1970.

(2) The percentage increase in supply and consumption from 1960-64 to 1974 assumed to be equal.

² See table 3 for estimated components.

The domestic market is the largest market for U.S. grown tobacco, about six-tenths of the total. Consumption in the United States accounts for about 15 percent of the world total. Our high per capita consumption is made possible not only by domestic production but also by large imports.

CONSUMPTION TRENDS AS INDICATED BY WORLD TRADE

Around the world the pattern of tobacco surplus and deficit countries vary widely. Some 25 percent of world output moves in international trade as unmanufactured tobacco. World tobacco trade has increased at a faster pace than production since 1960-64. By 1974 world trade in leaf tobacco had expanded 61 percent at a time when U.S. exports were up 31 percent (table 2). Other producing nations increased exports by 73 percent over 1960-64. So our share declined from 29 percent to 24 percent of the world total.

TABLE 2.—UNMANUFACTURED TOBACCO EXPORTS: WORLD TOTAL, UNITED STATES AND FOREIGN, AND U.S. IMPORTS FOR CONSUMPTION, 1960-74

[In million pounds]

Period	United States		Foreign exports ²	World total exports ²
	Imports for consumption ¹	Exports ²		
1960-64 average.....	168	497	1,194	1,691
1965.....	174	468	1,347	1,815
1966.....	185	551	1,138	1,689
1967.....	219	572	1,249	1,821
1968.....	211	599	1,202	1,801
1969.....	210	577	1,233	1,810
1970.....	219	510	1,328	1,838
1971.....	249	473	1,417	1,890
1972.....	240	606	1,749	2,355
1973.....	274	613	1,757	2,370
1974.....	300	651	2,075	2,726
Percent change 1960-64 to 1974.....	+78	+31	+73	+61

¹ Declared weight.² Farm sales weight.

During the same period that U.S. tobacco exports were not keeping pace with world trade, our imports for consumption in 1974 were 78 percent higher than the earlier period. Furthermore, domestic use of U.S. tobacco declined during the period that both our exports and imports were increasing. Our use of United States grown tobacco declined from 1,480 million pounds annually in 1960-64 to 1,300 million pounds in 1974 (table 3). Therefore, foreign producers are gaining a larger share of our domestic market.

The recent trends in U.S. exports and imports indicate that U.S. tobacco growers are faced with more intensive competition in both the foreign and the domestic market. Expanding consumption abroad has been largely met by increasing production in foreign countries. Foreign producers have captured a larger share of our domestic market. Both the world trends in production and trade indicate the declining importance of United States tobacco in world markets.

TABLE 3.—DOMESTIC DISAPPEARANCE OF TOBACCO, FOREIGN AND DOMESTIC TYPES, UNITED STATES, 1960-74
[In million pounds]

Period	United States tobacco ¹	Foreign tobacco ²	Total
1960-64 average.....	1, 478	222	1, 700
1965.....	1, 489	231	1, 720
1966.....	1, 415	245	1, 660
1967.....	1, 390	300	1, 690
1968.....	1, 369	281	1, 650
1969.....	1, 320	290	1, 610
1970.....	1, 289	301	1, 590
1971.....	1, 324	336	1, 660
1972.....	1, 322	328	1, 650
1973.....	1, 359	371	1, 730
1974 ³	1, 292	408	1, 700

¹ Domestic consumption.

² Imports for consumption (declared weight) multiplied by 1.35 and rounded to make U.S. total end in 0.

³ Subject to revision.

PRODUCTION PROSPECTS FOR THE UNITED STATES

Current trends indicate that increasing world use of tobacco will largely be met by foreign production. The United States is faced with a possible decline in domestic consumption, continued increases in imports, plus a slower rise in exports. A decline in total use of United States tobacco may be reflected in a further reduction in U.S. production. However, U.S. exports of unmanufactured tobacco are now about twice as large as imports, so the United States will likely continue to have considerable net exports for many years. Nevertheless, our domestic growers face a competitive challenge to keep this export surplus. Domestic growers will need to keep the cost of producing tobacco from denying them an economically healthy share of both the domestic and world markets for tobacco.

FLUE-CURED TOBACCO, MECHANIZATION DEVELOPMENTS AND ADJUSTMENTS

[By Owen K. Shugars and Frederic L. Hoff, Commodity Economics Division,
Economic Research Service, USDA]

Last year at this conference we reported some preliminary results from a study of changes and adjustments in the flue-cured tobacco industry.¹ Today we can update that report with some major findings. We will use 1972 as a reference point because we have comprehensive survey data for that year and harvest mechanization was just getting underway.²

Last year, we projected that by 1978, assuming output equal to the 1972 crop, up to 36 percent of the flue-cured tobacco acreage would be mechanically harvested. Moreover, other bulk barn systems would be used for about 44 percent of the acreage. Thus, these labor-saving systems were projected for 80 percent of the 1978 crop, assuming it equal to the 1972 harvest. We recognized that the assumption about crop size might not hold. Furthermore, we recognized that mechanization was related to farm size and that different levels of mechanization would result from different output levels. Therefore, we have developed a more rigorous analysis with a linear programming model that permits us to vary output and evaluate the effect on mechanization and on the demand for harvest labor. For this analysis we extended the projections to 1980 to conform with other parts of the overall study.

Projections of harvest mechanization were made for assumed "low," "medium," and "high" demand for flue-cured tobacco with the following results:

(1) Assuming that with "low demand," output in 1980 is 50 percent less than in 1972: 21 percent of the crop would be mechanically harvested and an additional 65 percent would be handled with other bulk barn systems.

(2) Assuming that with "high demand," output in 1980 is 50 percent greater than in 1972: 30 percent of the crop would be mechanically harvested and an additional 62 percent would be handled with other bulk barn systems.

(3) Assuming that with "medium demand," output in 1980 is equal to the 1972 crop: 22 percent of the crop would be mechanically harvested and an additional 67 percent would be handled with other bulk barn systems.

¹ The Flue-Cured Tobacco Industry—Changes and Adjustments. Report of D.S.P. Research Team, 1975 U.S. Agricultural Outlook, Committee Print, Committee on Agriculture and Forestry, United States Senate, 93d Congress, 2nd Session, pp. 295–302.

² Grise, Verner N., Shugars, Owen K., Givan, William D., and Hoff, Frederic L.; Structural Characteristics of Flue-cured Tobacco Farms and Prospects for Harvest Mechanization AER No. 277, U.S. Department of Agriculture, Economic Research Service, January 1975.

In 1972, harvest of the crop in the study area, nearly 75 percent of total U.S. flue-cured tobacco production, took 72.2 million hours of labor. The model projects this same size crop in 1980, with optimal harvest systems, would require only 39 million hours of harvest labor. Even if the crop is 50 percent greater than in 1972, harvest labor needs would decline by 16.7 million hours. Clearly there is a potential for a substantial reduction in the amount of labor used for flue-cured tobacco harvest and mechanization is being rapidly adopted. We estimate that about 38 percent of the 1975 crop was cured in bulk barns with about 18 percent mechanically harvested. Because 1975 production was greater, more harvest labor was needed than in 1972 when only about 1 percent was mechanically harvested and 8 percent cured in bulk barns. Despite rapid adoption of harvest mechanization since 1972, the consequent labor savings per unit were more than offset by the labor-increasing effects of a larger crop.

For 1976 we expect harvest labor per 100 pounds to decline about 10 percent and to continue to decline, though at a decreasing rate, for the rest of this decade. Bulk barns may be used for more than half and automatic harvesters for nearly a fourth of the 1976 crop. If these estimates hold we are about on track to reach the projected 1980 mechanization levels. Remember, the projections assume growers choose the optimal mix of harvest systems, thus they probably represent maximum levels of mechanization.

Last year we estimated that by 1978, perhaps 160,000 to 200,000 fewer people would be needed to harvest a 1972 size flue-cured tobacco crop. This was derived by dividing the projected reduction in hours of harvest labor by a rough estimate of the average hours per harvest worker. We used 240 hours which compares rather well with results of a household survey later reported by Hoover and Perkinson.³ They found, in an important flue-cured tobacco area, workers averaged 260 hours in harvest. Based on 260 hours, the projected reduction for 1980 compared with 1972 is about 170,000 workers for the entire flue-cured production area. If crop size reflects the high demand the number of workers needed falls by about 84,000 and for the low demand simulation by about 266,000. The reduction is less in the high demand situation because of the offsetting effects of expanded production. Considering these estimates in the context of time and geographic area puts them more in perspective. The greatest impact is from the low demand situation: A decline of 266,000 workers over an 8-year period (1972-1980). These workers would be distributed over an area of about 200 counties. Thus the average annual reduction in harvest workers is 166 per county. However, workers are not distributed evenly over the area so the impact would be greater than average in some counties and less than average in other counties. In the most concentrated production region, the Coastal Plain of North Carolina, disemployment for the low demand situation could range up to 770 workers per county per year. For the high demand situation, the top of the range would be about 240 workers per county per year in the Coastal Plain of North Carolina.

³ Hoover, Dale M. and Perkinson, Leon B., Hired Tobacco Harvest Work Force Characteristics in an Eight County Area of North Carolina, paper presented at American Agricultural Economics Association meeting, Columbus, Ohio, August 1975.

Because tobacco harvest work is seasonal, a decline in number of harvest workers needed means the loss of part-time jobs “. . . not the same as a job lost in year around work.”⁴ This does not mean that such losses are necessarily insignificant. It does imply that an analysis of the implications of a decline in demand for harvest labor requires information about the characteristics of harvest workers. Comparing “worker requirements” of mechanized harvest systems with those of conventional systems expected to be replaced gives some insight into who might be affected by reduced harvest employment opportunities. Bulk barn systems tend to employ fewer youth (under age 18), fewer women (18–45), and fewer older workers (over 45), than do conventional systems. Major jobs associated with conventional systems not needed with bulk systems are done by: Handers, hand loopers and tying machine workers. More than 90 percent of the workers performing these tasks in 1972 were youth (under age 18) and women (age 18 and older). Mechanical harvesters will reduce the number of primers needed and they tend to be young and middle-age males. Opportunities for jobs with mechanized systems such as bulk rackers, barn loaders and barn unloaders tend to favor able-bodied males. Although most of these jobs can be and sometimes are done by women, survey results show that in 1972 males did 80 percent of the harvest work for bulk barn systems compared with 61 percent for conventional systems.

This information does not permit us to accurately project the distribution of forthcoming adjustments among work force subgroups but it does point to youth and women as the most likely to lose harvest job opportunities.⁵ It appears also that job losses would fall heavily in the seasonal hired worker category, as opposed to family worker and regular hired workers. Seasonal hired workers did 75 percent of the handing, 74 percent of the hand looping and 63 percent of the tying machine work in 1972. Moreover, it is likely that family and regular hired workers would have priority for jobs with mechanized systems.

The foregoing provides some insights into the characteristics of individuals who might be adversely affected by changes in flue-cured tobacco harvest technology and production. Hoover and Perkinson, using a similar rationale derived a “crude” estimate of who would bear the adjustment process. For a 40-percent decline in the demand for wage workers, they estimate that females would bear most of the decline. In their ranking of the order of employment decline young females age 12 to 17 account for 27 percent and young males age 12–13 account for 10 percent. They also point out: “. . . two-thirds of the hired workers were less than 25 years old, implying that, for many workers, tobacco harvest work is transitory from which most ‘graduate’ as they mature and complete schooling. Tobacco income will decline but adjustment will probably come relatively easy because of the large numbers of young workers.”⁶

It appears then, that flue-cured tobacco harvest mechanization will not cause serious unemployment problems in the context of the tobacco belt's economy. This is perhaps no consolation to the individual who

⁴ Hoover and Perkinson, *op. cit.*, p. 10.

⁵ For a discussion of the complexities of projecting such a distribution see Hoover and Perkinson, *op. cit.*, p. 8.

⁶ Hoover and Perkinson, *op. cit.*, p. 10.

might be denied this source of earnings. It may or may not be serious depending on his or her other opportunities. Families supplying harvest workers might be more seriously affected than is apparent from the observed effect on individuals. For example, some may be supplying several workers and be heavily dependent on harvest earnings. Analysis is underway to determine possible family impacts and to further evaluate the effects of expected changes on the people and economy of the flue-cured tobacco belt.

SUMMARY AND CONCLUSIONS

Projections to 1980 indicate substantial mechanization of flue-cured tobacco harvest under assumed "low," "medium," and "high" product demand situations. Results are based on a linear programming model which optimizes the mix of harvest systems. Projected levels of mechanization should be considered maximums, but experience since 1972 indicates we are well on the way toward attaining them.

Labor reductions would be greatest for low product demand and least for high demand. The number of people disemployed from harvest jobs is estimated to average 166 per county per year from 1972 to 1980 for the low demand situation. Because workers are not distributed evenly over the tobacco belt, disemployment could reach 770 people per county per year in the most concentrated production region. For the high demand situation the concentrated region's maximum would be about 240 disemployed per county per year.

It does not appear that harvest mechanization will inflict serious unemployment problems on the flue-cured tobacco belt. Harvest jobs are seasonal and their loss is not the same as the loss of a year around job. Many who may lose this work opportunity are youth who tend to "graduate" from this transitory employment. However, individuals heavily dependent on harvest earnings and with no other opportunities, can ill afford to lose harvest employment. Some families, supplying harvest workers, may be more seriously affected than is apparent from the observed effect on individuals. Analysis underway will examine possible family impacts.

OUTLOOK FOR COTTON

[By Russell G. Barlowe, Commodity Economics Division, Economic Research Service, USDA]

An understanding and appreciation of the past often brings the future into sharper focus. Today as we examine the outlook for cotton, I think it is appropriate to pause in recognition of our Nation's Bicentennial and pay tribute to the important role that this natural fiber has played in our 200-year history.

Early records indicate cotton production in Revolutionary times centered mainly in Virginia, the Carolinas, and Georgia. However, it was not until after 1793 when Eli Whitney invented the cotton gin that cultivation began on a systematic scale. Prior to that time, the laborious process of separating the seed from the lint discouraged cotton production and farmers concentrated on food crops, tobacco, and indigo. From 3,000 bales in 1790, U.S. cotton production jumped to 100,000 bales in 1801 and ultimately to a record 19 million in 1937. Most of our early crops found their way into the export market, supplying the needs of textile mills in England and other countries, enabling our struggling young Republic to import those necessities which could not be produced at home. In fact, half of the 11¼ billion bales produced in this country since 1776 has been exported. The other half, of course, has been consumed domestically, enabling U.S. textile mills to supply an abundance of apparel, household, and industrial products to consumers at home and abroad. So this small, white, fluffy fiber has helped provide the foundation for our strong agricultural economy and greatly contributed to our rapid industrial expansion of the past 2 centuries.

TEXTILES AND THE ECONOMY

The health of the general economy is extremely important to the U.S. textile industry. Seldom has this been as apparent as during recent years. As the economy prospered during the early 1970's, textile mills hummed with activity. Consumption of all fibers increased sharply, reaching a record 12½ billion pounds in calendar 1973, or nearly 60 pounds per person. During this boom period, per capita cotton use held relatively stable at around 18½ pounds. But as we all know, economic conditions deteriorated in late 1974. Rampant inflation and rising unemployment impacted heavily on the textile sector. Reduced consumer demand for apparel and household goods caught retailers with large inventories on hand. So, in an attempt to achieve a better balance between stocks and depressed sales, retailers drastically cut new orders. This development rapidly translated into sharply curtailed mill operations and reduced fiber demand. As a result, total

fiber consumption dropped to 11.1 billion pounds in 1974 and will probably amount to only slightly over 10 billion in 1975. This consumption level translates into slightly under 50 pounds per person, of which cotton may account for nearly 14 pounds (figure 1).

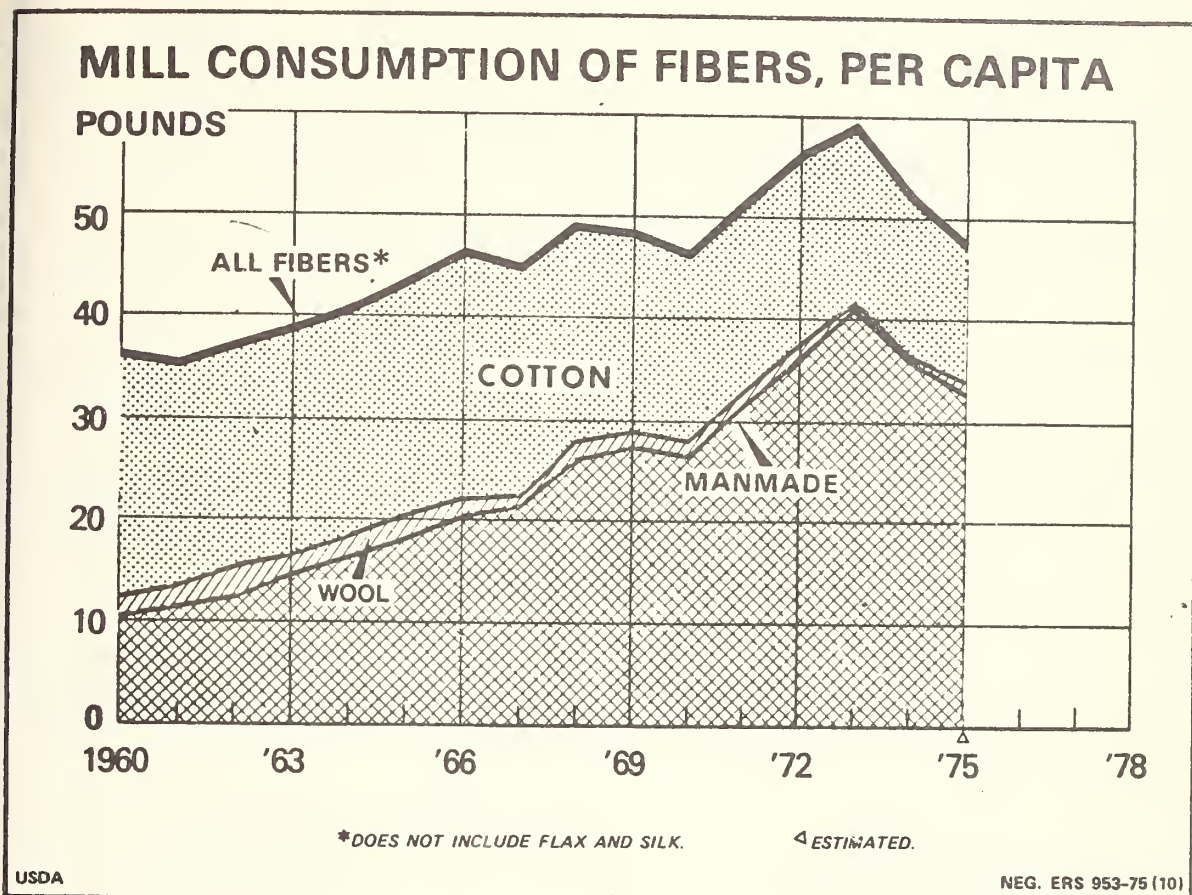


FIGURE 1

Fortunately for the textile industry, the recession has bottomed out and general economic activity is improving. Continued recovery will depend heavily on further increases in consumer spending, which in turn will depend on real consumer income, consumer confidence, employment levels, and a host of other factors. There is some concern that inflation may again rear its ugly head and take a larger bite out of consumer purchasing power. Such a development would drastically slow the recovery process, both in the general economy and the textile industry. However, most analysts are looking for a continued gradual, albeit bumpy, recovery in the economy. Increases in real consumer income should promote increased retail sales, expanded textile activity, and larger fiber consumption.

CURRENT SITUATION AND OUTLOOK FOR 1975/76

While strengthening fiber demand and competitive cotton prices highlight the domestic situation, continuing weak demand abroad and noncompetitive U.S. cotton prices in world markets feature the foreign situation. So as domestic cotton use has rapidly recovered from the recent recession, export sales activity has remained extremely depressed. Meanwhile, sharply smaller U.S. production is dropping current season supplies to the second lowest level since 1947/48.

TABLE 1.—COTTON SUPPLY AND DISAPPEARANCE

Item	Million bales	
	1974-75 preliminary	1975-76 projected
Beginning stocks.....	3.8	5.7
Production supply ¹	11.5	9.0
	15.4	14.8
Mill consumption.....	5.9	6.8-7.3
Exports.....	3.9	3.5-4.0
Disappearance.....	9.8	10.3-11.3
Difference unaccounted ².....	.1	.1
Ending stocks.....	5.7	3.6-4.6

¹ Includes imports; totals may not add due to rounding.

² Difference between ending stocks based on census data and level implied by subtracting disappearance from supply.

The 1975 cotton crop is placed at 9 million bales based on the November 1 estimate, nearly a fourth below 1974 output. And with beginning stocks of 5.7 million bales last August, the supply may total only about 14.8 million, compared with 15.4 million in 1974/75. On the demand side, we expect combined mill use and exports of 10.3 to 11.3 million bales. Consequently, stocks will be worked down as the season progresses, leaving an ending carryover next July 31 of perhaps 3.6 to 4.6 million bales (table 1 and figure 2).

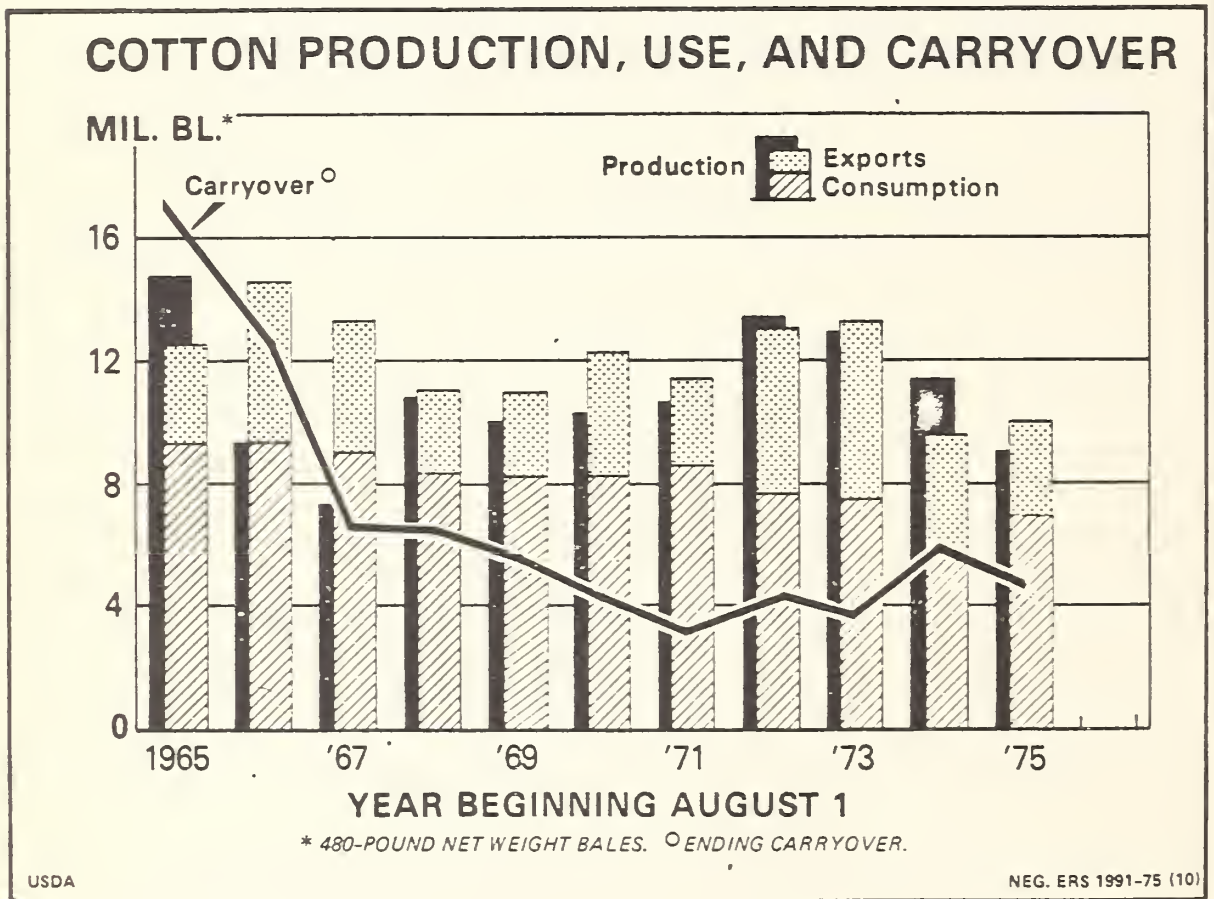


FIGURE 2

PLANTING CUT SLICES PRODUCTION

Faced with increased production costs, lower cotton prices, more attractive profit incentives for alternative crops such as soybeans and

grain sorghum, and adverse planting conditions in the Delta at planting time, growers trimmed cotton acreage 27 percent last spring. After normal abandonment of 7½ percent, farmers now are harvesting 9.3 million acres, 3.2 million less than last year. However, the estimated national average yield of 466 pounds per harvested acre is up moderately. Still, production of 9 million bales is 22 percent below the 1974/75 level (figure 3).

COTTON: ACREAGE, YIELD, AND PRODUCTION

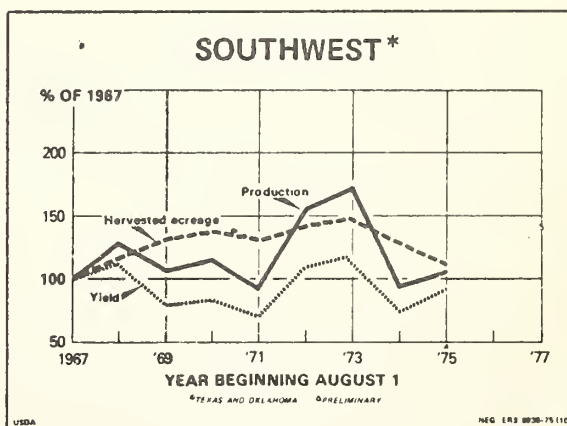
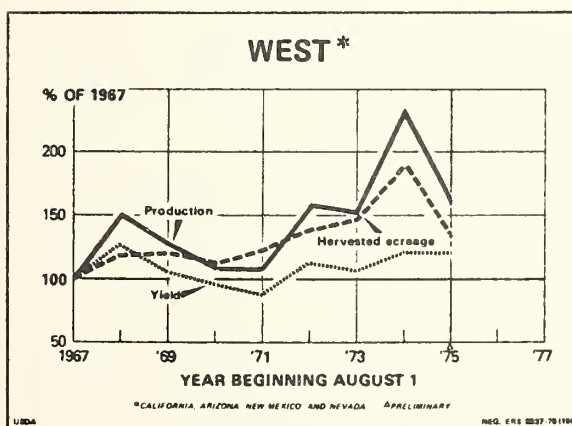
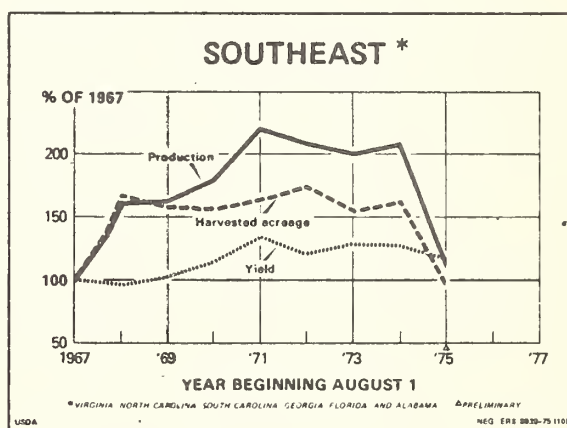
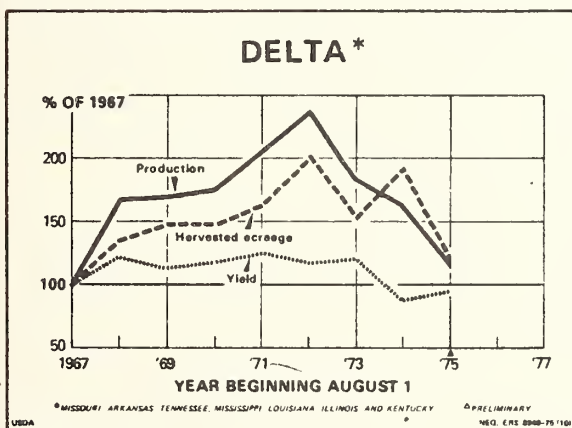
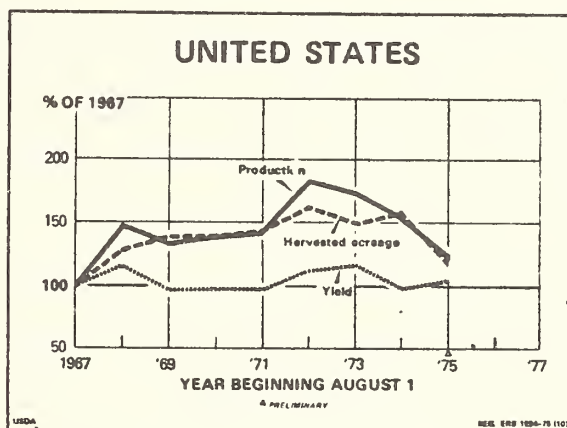


FIGURE 3

Continued uncertainty surrounds 1975 crop prospects. Insects, boll rot, and adverse weather conditions have damaged cotton in many areas of the Cotton Belt. Since the crop is late this year, the full impact of these problems on yields may not materialize for some time to come. As of early November, only a third of the crop had been harvested, behind the normal 40 percent. Ginnings to November 1 amounted to a record-low 2.8 million running bales.

Among the various regions, estimated 1975 cotton production is down nearly a third in the Delta and West, and a whopping 45 percent in the Southeast. In fact, output in the Delta and Southeast, at 2.6 million and 0.7 million bales, respectively, is the smallest since 1967. However, expected production is up about a tenth in Texas and Oklahoma, despite reduced acreage, since prospective yields are a fourth above the depressed 1974 level.

With national average yields of less than a bale per harvested acre, the total cost of growing the current crop is expected to top the 1974 average. Despite the higher yields associated with the 1975 crop, further sharp increases in the cost of inputs this year, particularly seed, insecticides, fertilizer, and machinery, will boost costs per pound moderately.

COTTON PRICES LEVEL OFF

After increasing sharply from January through September, cotton prices have leveled off since early October. Less deterioration in production prospects than feared earlier has contributed to the recent relative stability. The price recovery during the past 10 months reflects the small 1975 crop, improved demand, and withholding of cotton from the market by producers because of the low prices seen earlier. And with only limited forward contracting of the 1975 crop, producers' stocks will jump sharply in coming weeks. As of October 1, farmers had booked about 8 percent of acreage, compared with 21 percent a year ago. By regions, contracting ranges from little or none in the Southwest to over a fourth in the Far West.

The spot market price of base grade SLM $1\frac{1}{16}$ -inch cotton now is about 50 cents per pound, near the month-earlier level, but about 15 cents above last December's low. By comparison, SLM 1-inch prices are about 45 cents per pound (figure 4).

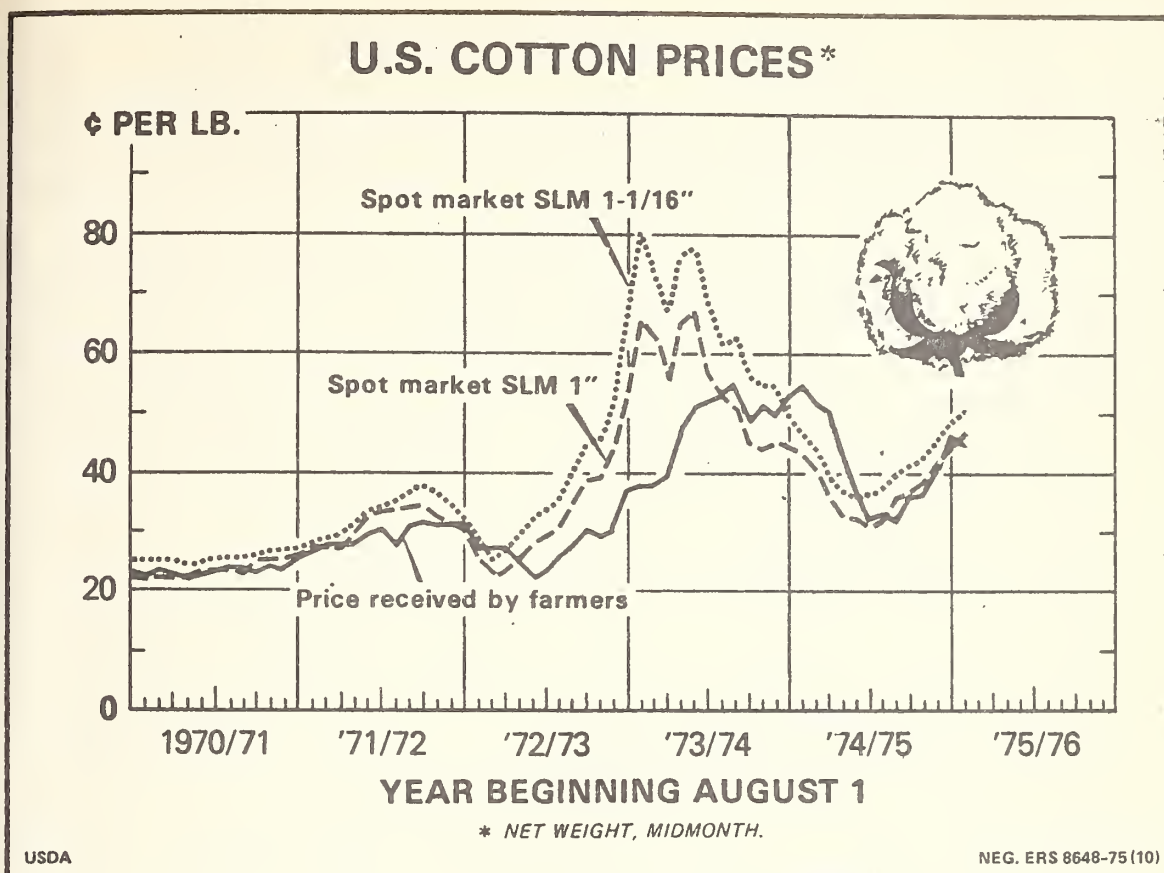


FIGURE 4

Farm prices of upland cotton have moved up steadily since hitting a low of 32 cents per pound in April. Prices averaged about 50 cents in October, near the year-earlier level. The value of the 1975 crop may almost equal last year's \$2¼ billion, despite the smaller volume. Disaster payments likely will fall below 1974/75's \$128 million.

MILL USE BOUNCES BACK

Domestic mills during 1975/76 will use considerably more cotton than last season's 5.9 million bales, which was the smallest since the 1930's. Our estimate now places consumption at 6.8 to 7.3 million bales. The exact level will depend on general economic and textile activity during the next few months as well as competition from man-made fibers.

Fashion is also playing a significant role in cotton's comeback. The "casual natural look" has been gaining favor with more and more consumers during recent years. Until this year, all-cotton denim and corduroy were the primary benefactors. But now, the natural look has broadened into increased demand for other coarse cotton fabrics, i.e. brushed sateens, twills, sheetings, etc. The popularity of coordinates and leisure suits is also a plus for cotton.

So with increased consumer purchasing power and the release of pent-up demand from the spending slowdown of the past 2 years, demand for cotton goods has recovered sharply in 1975, as reflected in recent consumption rates. The seasonally adjusted daily rate of mill use has increased nearly 50 percent since last December and is now

above a year ago. (figure 5). September use translated into an annual rate of slightly over 7 million bales. However, recent stability in new orders relative to inventories of cotton textiles and the fact that the recent strong recovery may reflect some upward readjustment in pipeline inventories point to a leveling off in the consumption rate during the next few months.

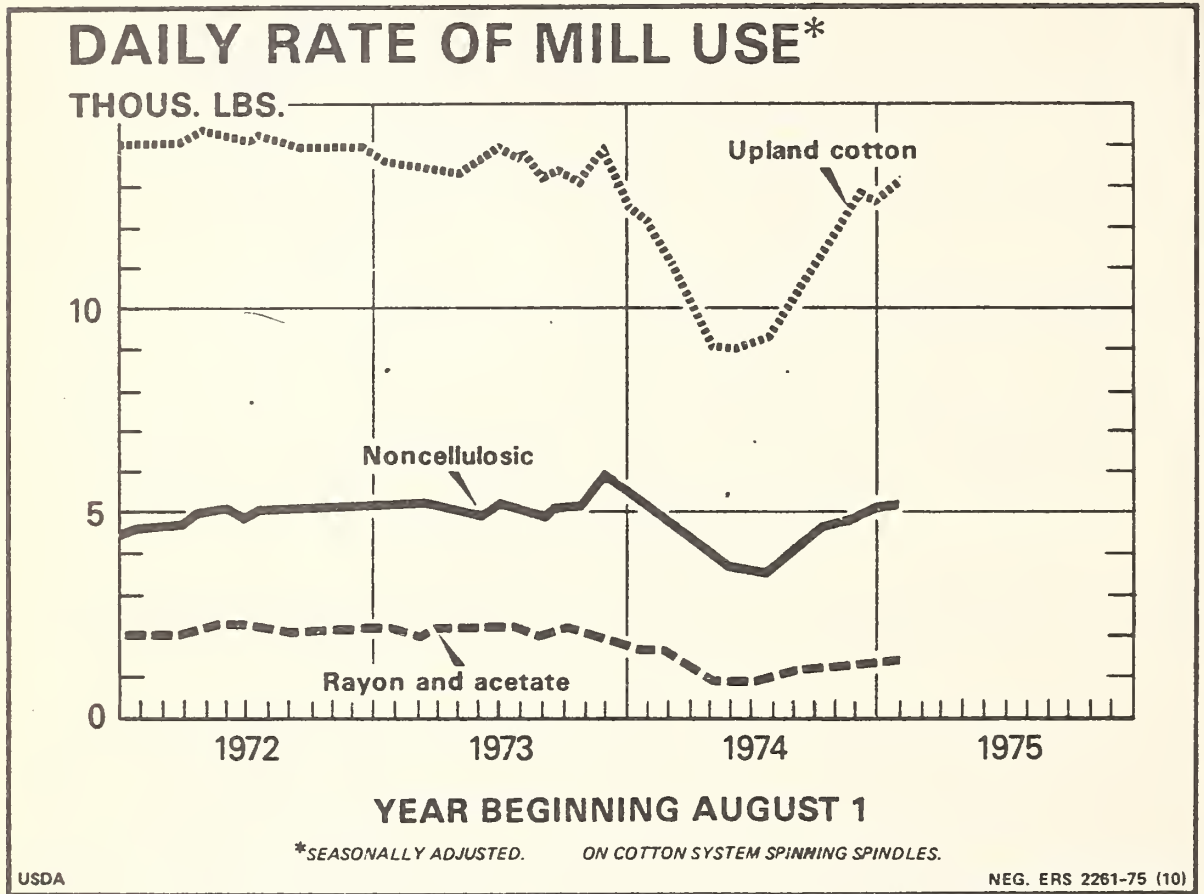
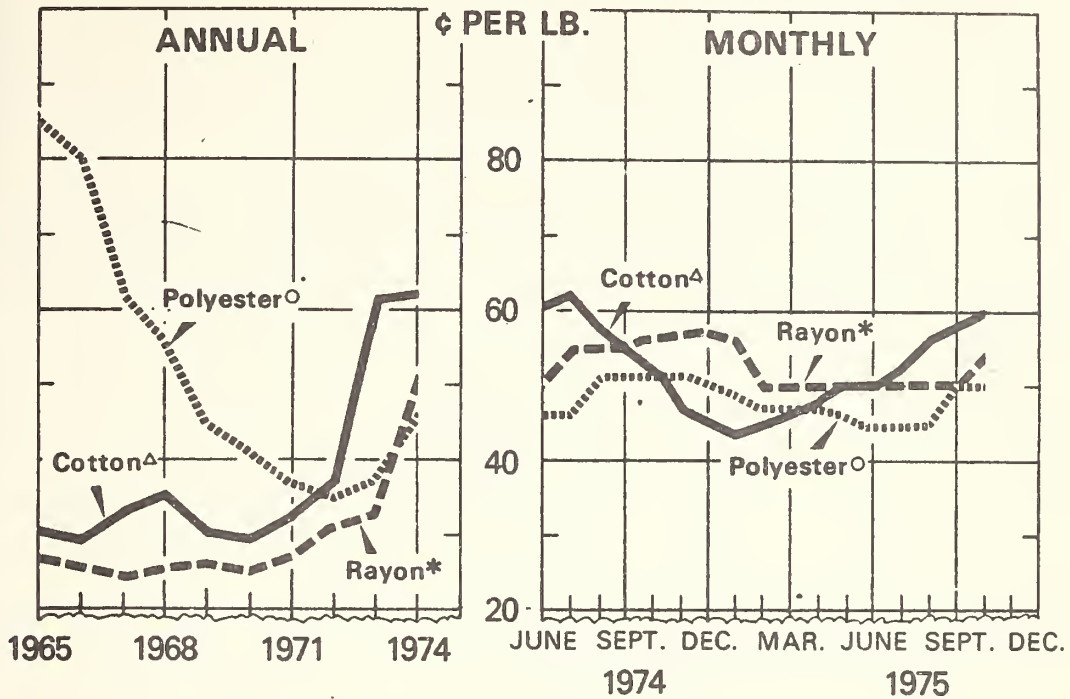


FIGURE 5

Interestingly enough, manmade fiber use has not rebounded as much as cotton. For instance, while the seasonally adjusted September daily rate of cotton use averaged 8 percent above a year earlier, noncellulosic staple use was down 1 percent. Cellulosic staple consumption fared even worse, remaining 17 percent below last fall.

Very competitive cotton prices earlier this year have been an important factor in cotton's recent gains. Although cotton is now at a slight price disadvantage with respect to manmade fibers, current price levels are not considered seriously detrimental to cotton use. Mill-delivered prices for Middling $1\frac{1}{16}$ -inch cotton now are approaching 60 cents per pound, nearly 15 cents above last January's level. This compares with polyester and rayon staple prices of about 50 and 54 cents per pound, respectively (figure 6). However, manmade fiber prices are also on an upward trend. Polyester staple prices are slated to increase 5 cents per pound in December, the second such increase since September. As with cotton, manmade fibers are also confronted with rising production costs.

RAW FIBER PRICES



○TYPE 54, 1.5 DENIER DACRON STAPLE. ΔMIDDLING 1-1/16" AT GROUP B MILL POINTS.
 *1.5 AND 3.0 DENIER, REGULAR RAYON STAPLE.

USDA

NEG. ERS 864-75 (10)

FIGURE 6

In a continuing battle to improve cotton's competitive position, \$16 million is earmarked this year for research and promotion. Nearly two-thirds of these funds are being supplied by upland cotton producer contributions under the Cotton Research and Promotion Act of 1966. The balance is about evenly split between CCC funds for cotton research under Authority of the Agriculture and Consumer Protection Act of 1973, and funds being spent for research and promotion by Cotton Council International and the International Institute for Cotton.

EXPORT DEMAND WEAK BUT EXPECTED TO RECOVER

In the vein of the recently popular "good news-bad news" jokes, there is a parallel today in the cotton situation. The good news is the improved prospects which I have just outlined on the domestic front. The bad news is the continuing rather bleak export situation.

Figure 7 vividly illustrates the U.S. cotton export situation during recent years. Following a period of moderate foreign demand for U.S. cotton in 1970/71 and 1971/72, demand exploded in early 1972/73. Sales jumped from an average of around 300,000 bales per month to over 800,000 bales. And prices rose rapidly. Increased U.S. sales reflected overheated demand, larger consumption abroad, and the fact that a number of foreign exporting countries held cotton in hopes of obtaining higher prices. These factors were coupled with a slight decline in foreign production because of adverse weather and some shift in acreage to food crops. For instance, production difficulties in the People's Republic of China during this period resulted in significant

sales of U.S. cotton there. The exceptionally strong foreign demand for our cotton continued into early 1973/74, straining our transportation and handling facilities. Consequently, as shown in figure 7, actual shipments never reached the average monthly sales level. In fact, some of the cotton sold during this period of peak demand is still being delivered today as the result of last season's delays by several Far Eastern countries in opening letters of credit.

U.S. COTTON EXPORTS AND PRICES

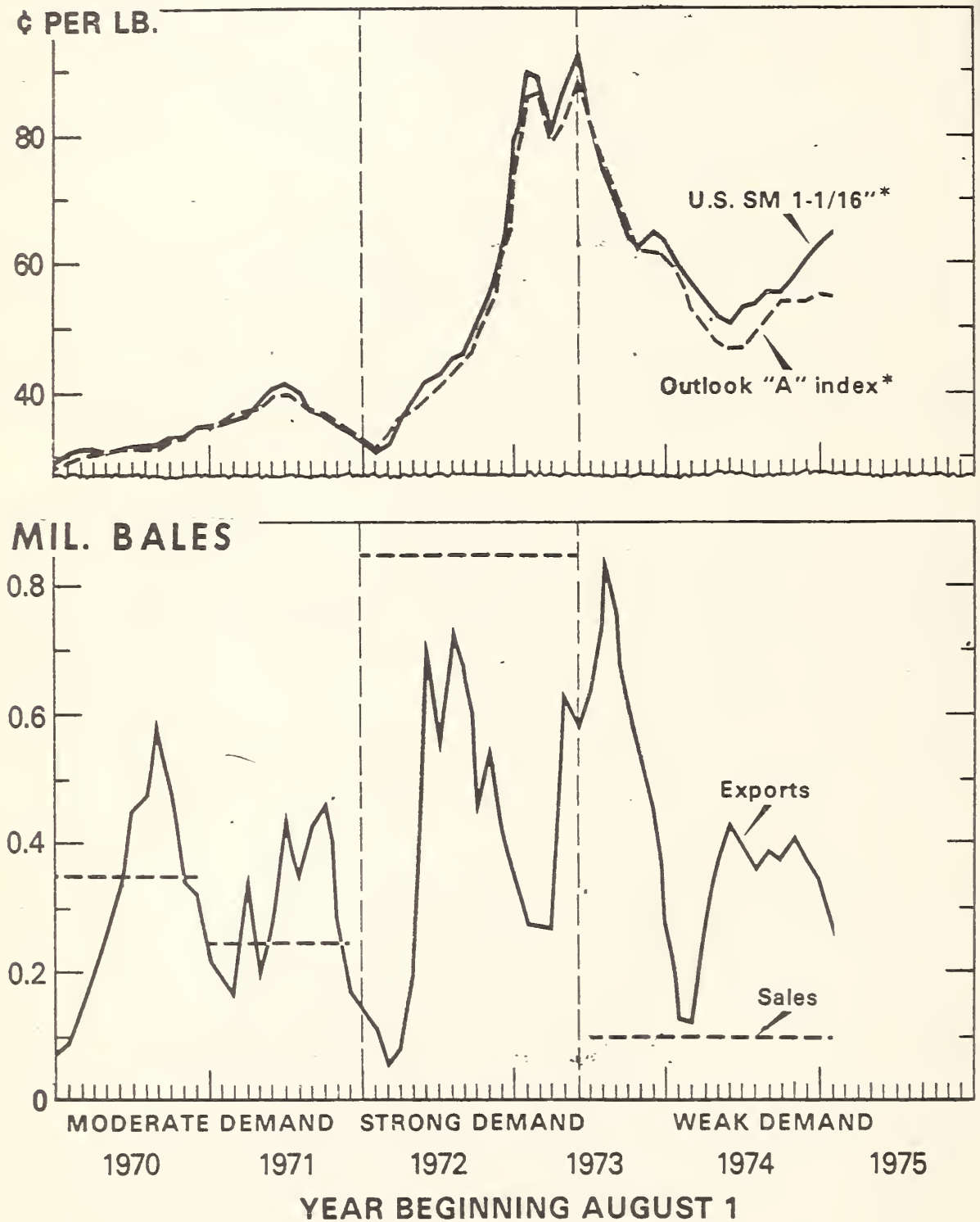


FIGURE 7

However, a dramatic reversal in the export situation occurred in mid-1973/74. Demand for cotton began to suffer as the recession spread around the world. U.S. cotton export sales dipped and cotton prices dropped sharply, hitting a low in mid-1974/75. Since February 1974, net sales have averaged only about 100,000 bales per month. Of course, actual shipments have exceeded this level, reflecting the large sales made earlier. Foreign demand remains weak and is not expected to recover significantly until 1976.

World cotton consumption may total about 61 million bales during 1975/76, up from 58 million last season, but still slightly below 1973/74's record. Most of the consumption gain will come during the latter stages of the season. The initial pickup in foreign textile activity is expected to take place in exporting countries, followed by importing countries, Japan, and finally Western Europe in late 1976. Meanwhile, production prospects this year are down sharply to about 58 million bales. So this past August's near-record stocks of around 30 million bales, a large portion of which were concentrated in foreign exporting countries, will be worked down as the season progresses. Prospective ending stocks of around 27 million bales will represent a little over 5 months' mill use, down from 6 months at the beginning of the season, but still slightly above the average of recent years.

U.S. cotton export prospects for the remainder of 1975/76 are directly tied to the timing and extent of recovery in economic and textile activity abroad. Sales activity during the next few months also will depend on the disposition of the large foreign stocks and the competitiveness of U.S. cotton in world markets. As I stated earlier, very few new sales have been made recently in view of depressed textile activity abroad and noncompetitive U.S. cotton prices. As shown in figure 7, U.S. cotton has been priced above most foreign competitive growths during the past year, resulting in cancellations of U.S. export sales totaling about 350,000 bales in the past 6 months. The large price differential reflects the stronger demand in relation to supplies in the United States, vis-a-vis foreign countries.

So prospective 1975/76 U.S. cotton exports are uncertain at the moment. Total commitments now stand at slightly over 2 million bales, most of which were carried over from last season. If foreign demand recovers quickly and U.S. prices become more competitive, shipments this season could perhaps match 1974/75's 3.9 million bales. On the other hand, our exports would be hard pressed to reach 3 million bales if demand abroad continues weak and our prices remain noncompetitive. The most likely scenario encompasses a moderate recovery in foreign cotton demand in early 1976. This development may lead to higher foreign prices, thus increasing the competitiveness of U.S. growths. As a result, U.S. exports could total around 3.7 million bales.

The U.S. share of world cotton trade is expected to decline in 1975/76, reflecting our current price disadvantage. The anticipated moderate improvement in global demand later this season may boost world trade about 0.7 million bales to nearly 18 million. At the same time, smaller U.S. shipments would mean a drop in our share to about 20 percent, compared with 23 percent in 1974/75. Still, our share would be near the average of the past decade (figure 8).

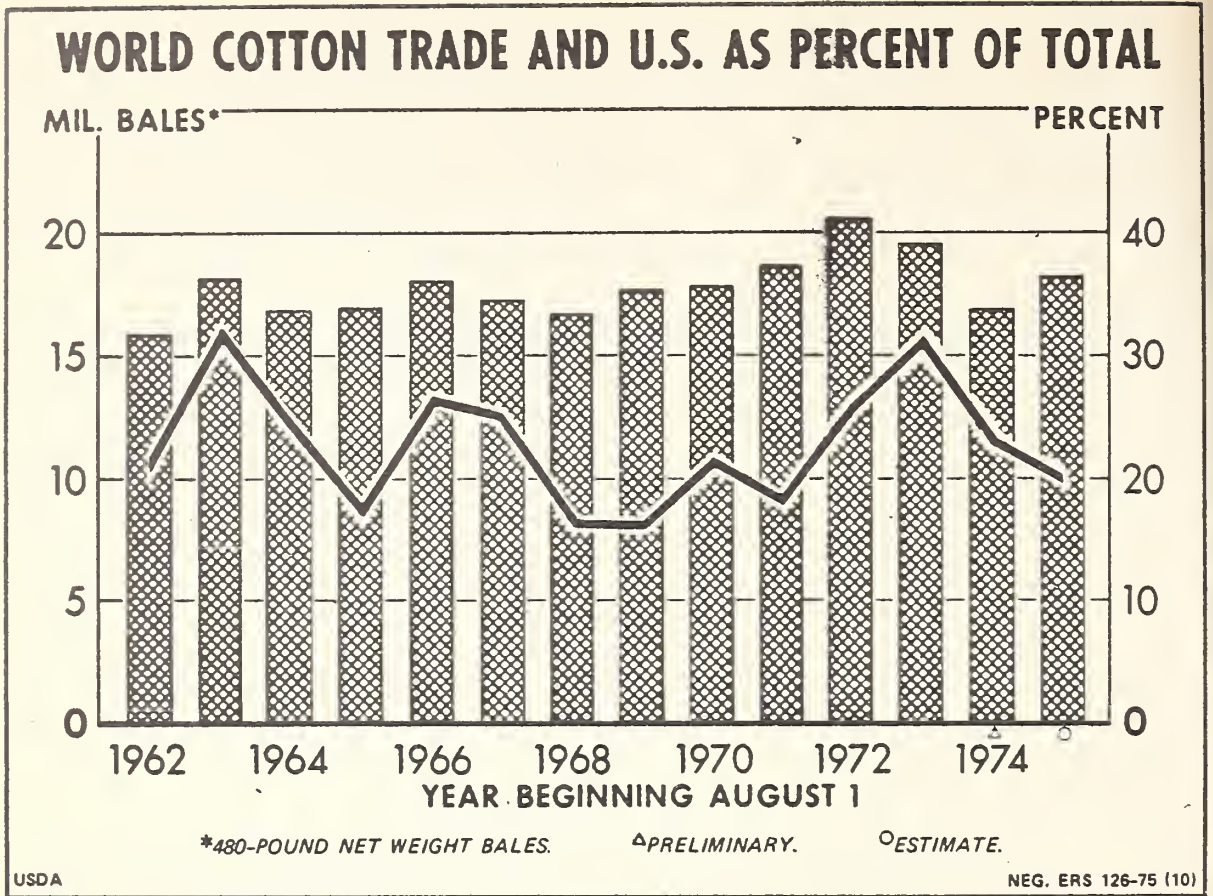


FIGURE 8

TEXTILE TRADE ACTIVITY SLOWS

With reduced consumer demand for cotton apparel and household products in early 1975, imports of cotton textiles are off sharply. Based on January–September trends, imports during calendar 1975 may total the equivalent of about 0.9 million bales, down from slightly over 1 million last year, and the least in a decade. However, imports have picked up sharply in recent months, as evidenced by the 17-month high established in September. At the same time, cotton textile exports may total about 0.7 million equivalent bales this year, also down sharply from 1974, but still the second highest level since the early 1950's. The popularity of American-made denim fabrics is contributing to the relatively large shipments. Thus, the estimated net import textile trade balance during 1975 is smallest since the early 1960's (figure 9).

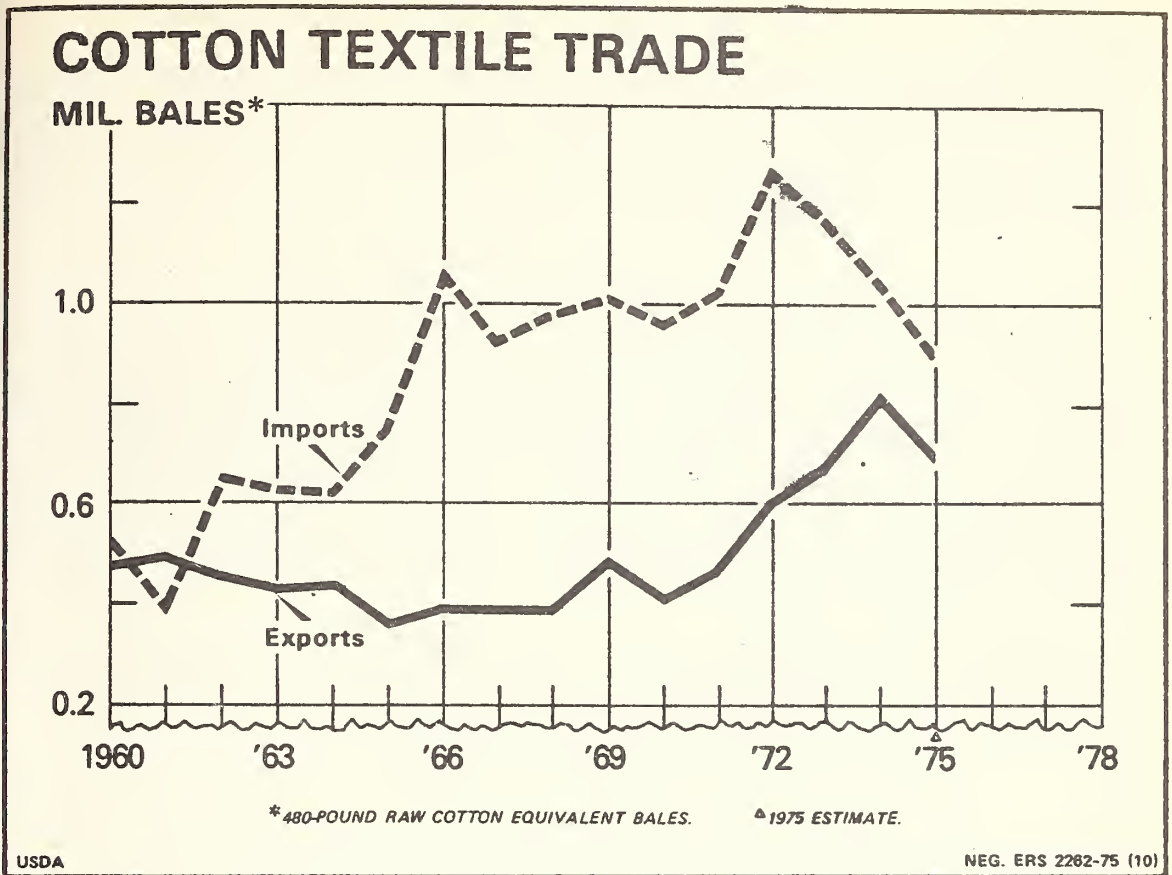


FIGURE 9

OUTLOOK FOR 1976/77

Economic forecasting is, at best, a perilous job. There may be some truth in Peter Drucker's statement that "We must start out with the premise that forecasting is not a respectable human activity and not worthwhile beyond the shortest of periods." Put another way, long-term forecasting is a bit like giving the weather forecast a year in advance. Nevertheless, I will briefly share with you some of my ideas about the cotton outlook for 1976/77.

As I stated earlier, we can look for a smaller carryover next summer, perhaps between 3.6 and 4.6 million bales. However, a larger 1976 crop could be in the cards. On the demand side, I foresee increased disappearance next season. Export prospects in particular look much brighter.

1976 UPLAND COTTON PROGRAM

Upland cotton producers in 1976/77 again will be operating under the Agriculture and Consumer Protection Act of 1973. Major provisions of the program for the 1976 upland cotton crop include:

A preliminary loan rate of 37.12 cents per pound (up 2.85 cents) for Middling 1-inch cotton (micronaire 3.5 through 4.9) net weight, at average U.S. location.

A national production goal of 12.4 million bales, compared with 12.6 million last year.

A national base acreage allotment of 11 million acres, same as in 1975.

No cropland set-aside or conserving base requirements as conditions of program eligibility.

A \$20,000 payment limitation per producer of cotton, wheat, and feed grains.

The target price for 1976-crop upland cotton will be announced in January when calendar year 1975 data become available. Current calculations indicate a target price of 42 to 43 cents per pound, up from 38 cents for the 1975 crop.

PRODUCTION PROSPECTS

Although it is too early to get a very clear picture of what the 1976 cotton crop is going to look like, preliminary indications point to larger acreage. The primary indicator is more competitive cotton prices. If current price relationships between cotton, soybeans, and grain sorghum prevail at planting time, farmers will likely switch some acreage, which moved out of cotton last spring, back to the natural fiber. However, high production costs will temper increased cotton acreage.

Cotton acreage planted in 1976 could total 11 to 12 million acres, up from 10.1 million this year. If so, production would increase sharply, as illustrated in figure 10. For example, if we assume around 11½ million acres are planted and yields average around the high 1973 level of about 500 pounds per planted acre, upland cotton production would total close to 12 million bales. On the other extreme, if yields average near last season's disappointing 400 pounds per planted acre, output of about 9½ million bales would be indicated. More realistically, a yield near the 1971-75 average of 450 pounds per planted acre would point to production of nearly 11 million bales, almost 2 million above the depressed 1975 level (figure 10).

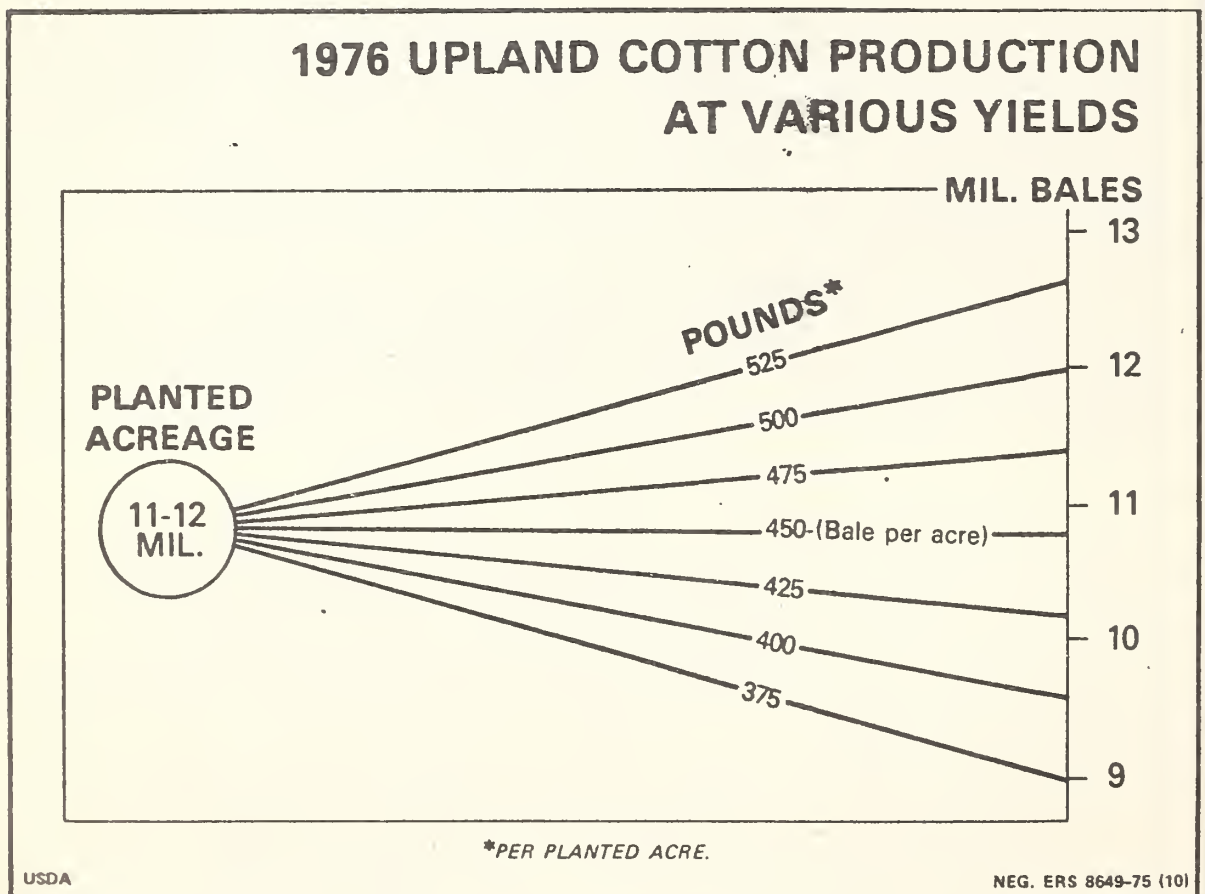


FIGURE 10

DISAPPEARANCE PROSPECTS

Cotton consumption in 1976/77 will continue to depend heavily on overall textile activity and the health of the general economy. Continued recovery in general economic activity should boost fiber use above this season's level. Hopefully, cotton will share in the market growth. Although the lion's share of increased fiber use will probably be collared by manmade fibers, cotton consumption could increase further, assuming prices remain competitive with manmade fibers.

U.S. cotton export prospects for next season appear favorable at the moment. As foreign consumption picks up in 1976 and currently cumbersome overseas stock levels are worked off, our exports should benefit. So U.S. shipments could total moderately above the current season's expected level.

In summary, I look for an upswing in the U.S. cotton situation in 1976/77. Somewhat larger production, exports, and perhaps mill use appear likely.

A POSITIVE RESPONSE TO THE COTTON OUTLOOK

[By Arlie L. Bowling, National Cotton Council]

I would like to complement Russell for his excellent presentation, especially his remarks on the historical aspects of cotton. His opening comments put cotton in a proper historical perspective—as one of the building blocks of our nation's progress. From the outlook you just heard, it appears that cotton will continue to be a major agricultural crop, an important industrial raw material, and a valuable export commodity.

Russell has done his usual good job of completely covering all aspects of the cotton outlook. Forecasting the future for an agricultural commodity is much like the man driving down the highway with an opaque windshield and looking in the rear view mirror at the yellow line behind him to judge where he is going. Russell has done an excellent job of analyzing historical information—the yellow line; and he has used this information to wipe much of the opaqueness from the windshield to determine where cotton is going.

Rather than to be repetitive, I will proceed directly to those points in the cotton outlook which we think deserve further analysis.

Starting with the supply-distribution table as shown on page 2, we want to focus on several areas—the estimates for domestic mill consumption; the export picture; and the expected 1976 carryover level as it relates to farmers' cotton planting decisions this spring.

DOMESTIC CONSUMPTION

First, the domestic mill outlook. USDA has estimated textile mill consumption of cotton for 1975-76 at 6.8 to 7.3 million bales. To a large degree, this estimate of cotton consumption is based on assumptions about total fiber consumption, and as Russell Barlowe has pointed out, fiber consumption is dependent on general economic conditions.

TABLE 1.—COTTON SUPPLY AND DISTRIBUTION

[Millions of 480-lb bales]

	1974-75	1975-76 estimate
Beginning carryover.....		
Production plus imports.....	3.8	5.7
Total supply.....	11.6	9.1
Domestic consumption.....	15.4	14.8
Exports.....	5.9	6.8-7.3
Total off-take.....	3.9	3.5-4.0
Difference unaccounted.....	9.8	10.3-11.3
Ending carryover.....	.1	.1
	5.7	3.6-4.6

One economic condition that directly influences fiber consumption is consumer income. Chart 1 below shows the close relation between per capita mill fiber consumption and real disposable personal income for the past 15 years. It also presents a leading forecasting service's projection of per capita disposable income through 1976. The disposable income projection, if accurate, should provide an indication of the direction fiber consumption will take through 1976.

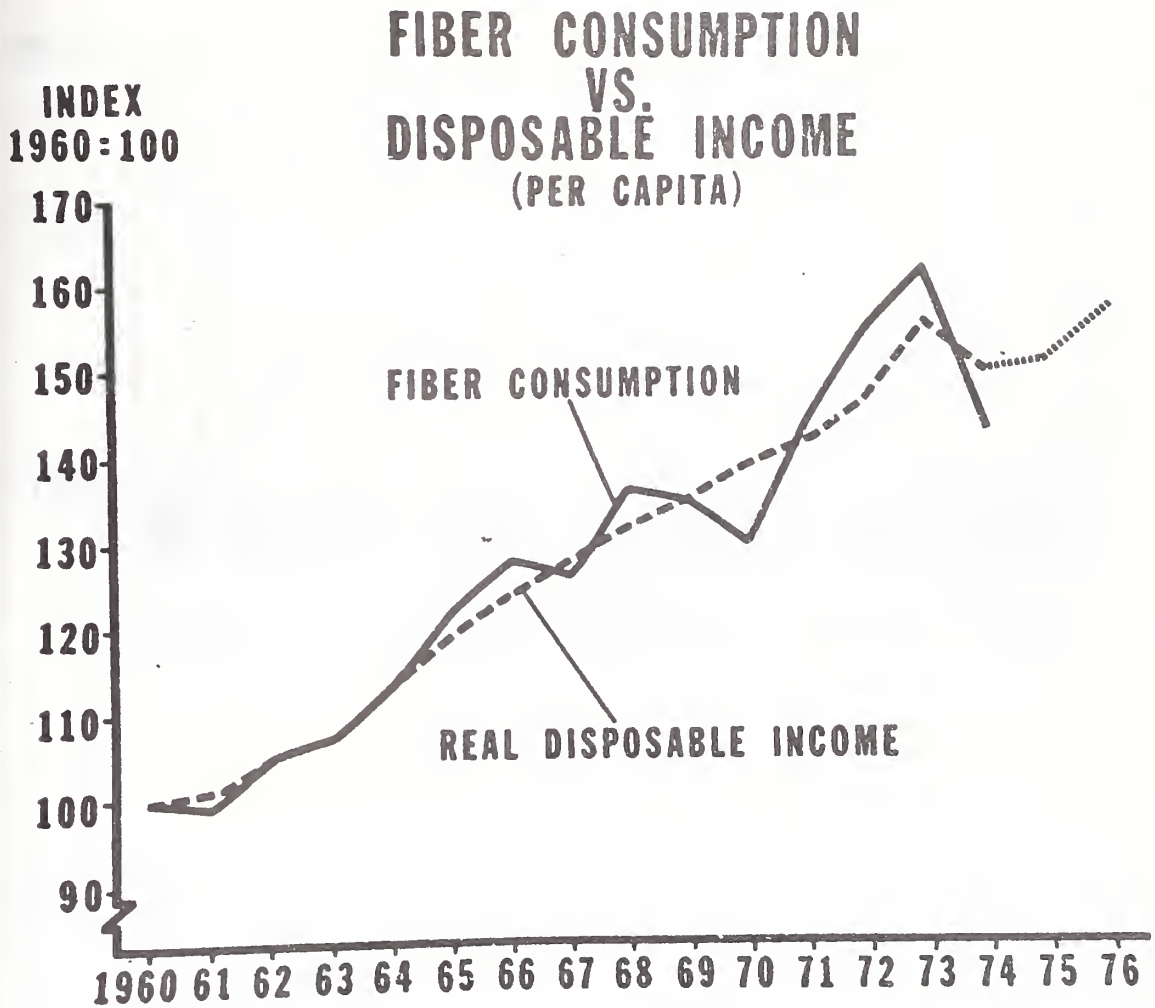


CHART 1

This projection of 3.5 to 4.0 percent growth in per capita disposable income—1976 over 1975—seems reasonable, and that kind of growth rate would bring real per capita disposable income back to the approximate level of 1973.

How does the outlook for 1976 fiber consumption compare with 1973's record level, and how will cotton fare competitively?

Chart 2 shows the record of total U.S. mill fiber consumption for calendar years 1973 and 1974 along with the seasonally adjusted annual rates for the first nine months of 1975. Notice that U.S. mill consumption of all fibers reached 25.5 million bale equivalents in the 1973 record year; cotton's share was 29.8 percent, or 7.6 million bales. Note also that the September 1975 annual rate for all fibers was 24.6 million bales, just 3.5 percent under the record high reached in 1973. Cotton's share was 29.4 percent, or 7.3 million bales. These latest figures are remarkable, indeed, considering that eight months earlier the annual

consumption rate for all fibers was only 14.3 million bales and, for cotton, just under 5 million bales.

U. S. MILL FIBER CONSUMPTION

(SEASONALLY ADJUSTED, ANNUAL RATES)

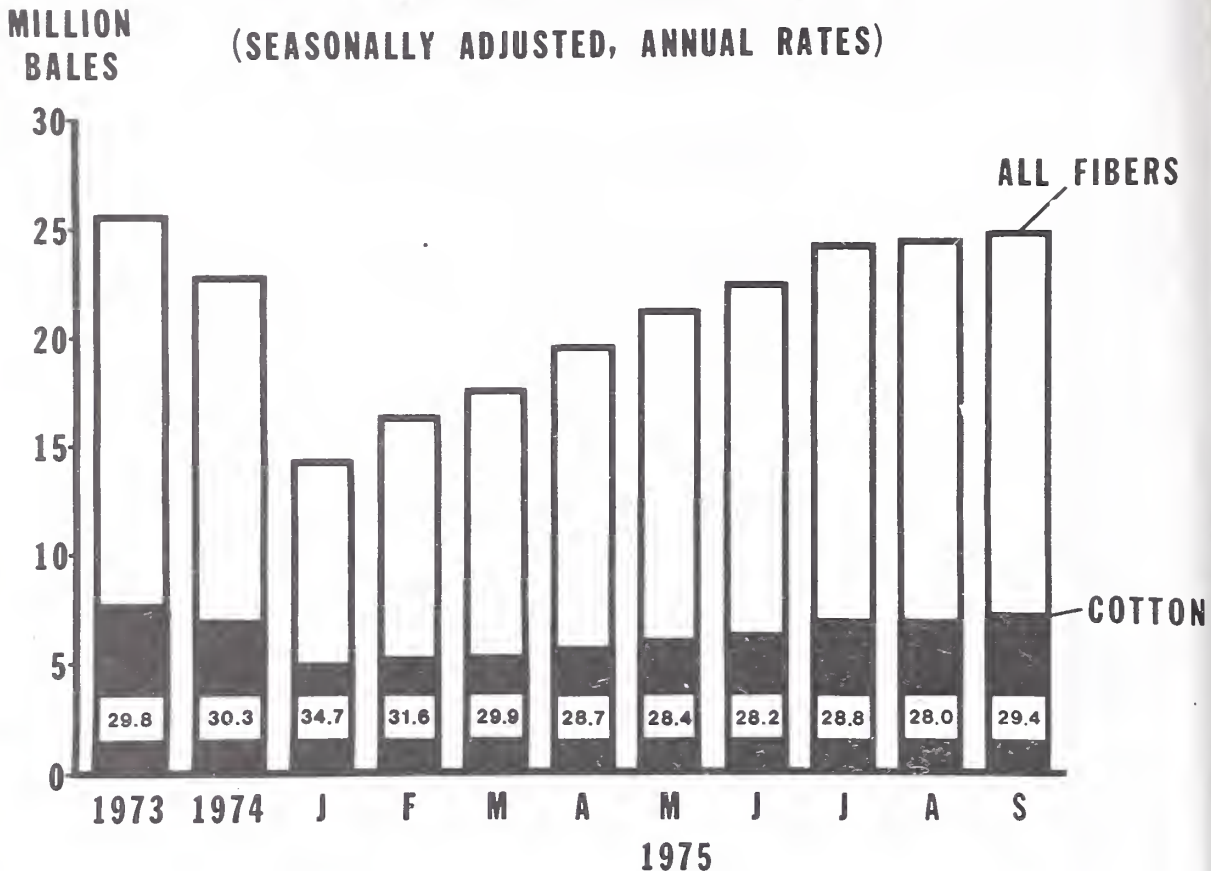


CHART 2

If fiber consumption is to expand above the September rate, consumers must have both the ability and the inclination to buy textile products. Disposable personal income, which we already have mentioned, is perhaps the best measure of the consumer's ability to buy. Attempts to measure the consumer's inclination to buy are made through surveys, the results of which are often expressed in the form of a consumer confidence or sentiment index (such as the University of Michigan Index shown in Chart 3). To provide a frame of reference, Chart 3 on page 287 illustrates these two indices, using 1973 as 100. Note that both factors moved higher in second quarter 1975. The consumer sentiment index continued upward in third quarter, approaching the average level of 1973, when fiber consumption reached its record high. Inflation and a change in the tax structure, however, dropped third quarter real disposable income below the second quarter level, reducing the consumer's purchasing power though his outlook remained positive.

SELECTED INDICES, 1973=100

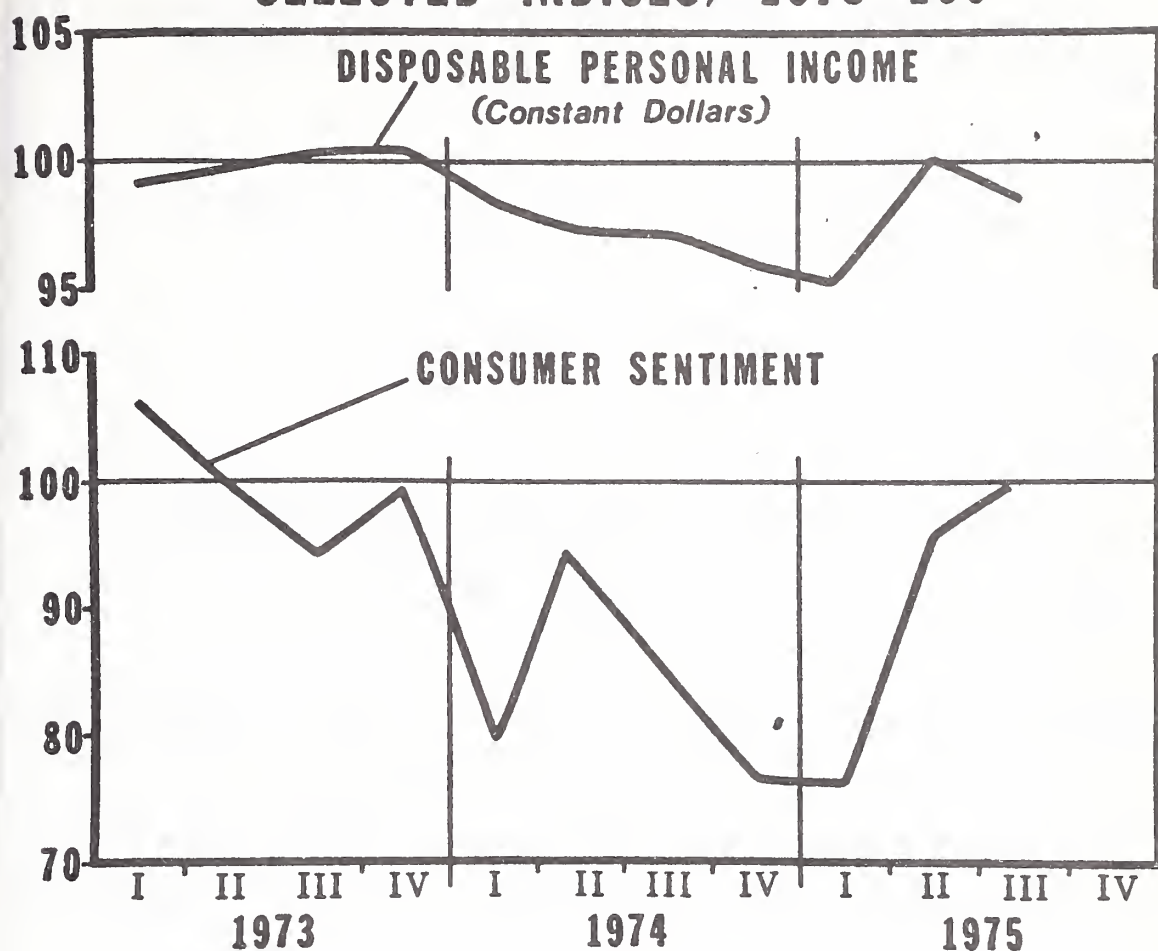


CHART 3

These aggregate measures of means and inclination to buy are not keyed to textile products only. A measure that provides information on textile usage is real expenditures for clothing and shoes, as shown in the upper half of Chart 4 on page 288. Notice how the expenditure index for clothing and shoes performed considerably better than the total personal consumption expenditure index during the first three quarters of 1975. It also is noteworthy that third quarter clothing and shoe expenditures continued to increase despite a drop in real disposable personal income.

It is not unusual for fiber consumption to out-perform disposable income growth in periods of economic recovery. Such was the case in 1961, 1967, and 1970 (as seen previously in Chart 1). The third quarter 1975 performance of the index for clothing and shoe expenditures, as indicated in Chart 4 on page 288, suggests a possibility of this happening again. But apparel accounts for a little less than 40 percent of total fiber consumption (about half of cotton consumption) and it is unlikely that the other two sectors, home furnishings and industrials, equalled the third quarter rate of growth in apparel. In addition, a sharp increase in the U.S. textile trade deficit (which some sources say is distinctly possible) would have a negative impact on domestic mill fiber consumption. Moreover, higher costs of such essentials as food and energy may tend to cut into textile products' normal share of personal consumption expenditures.

SELECTED INDICES, 1973=100

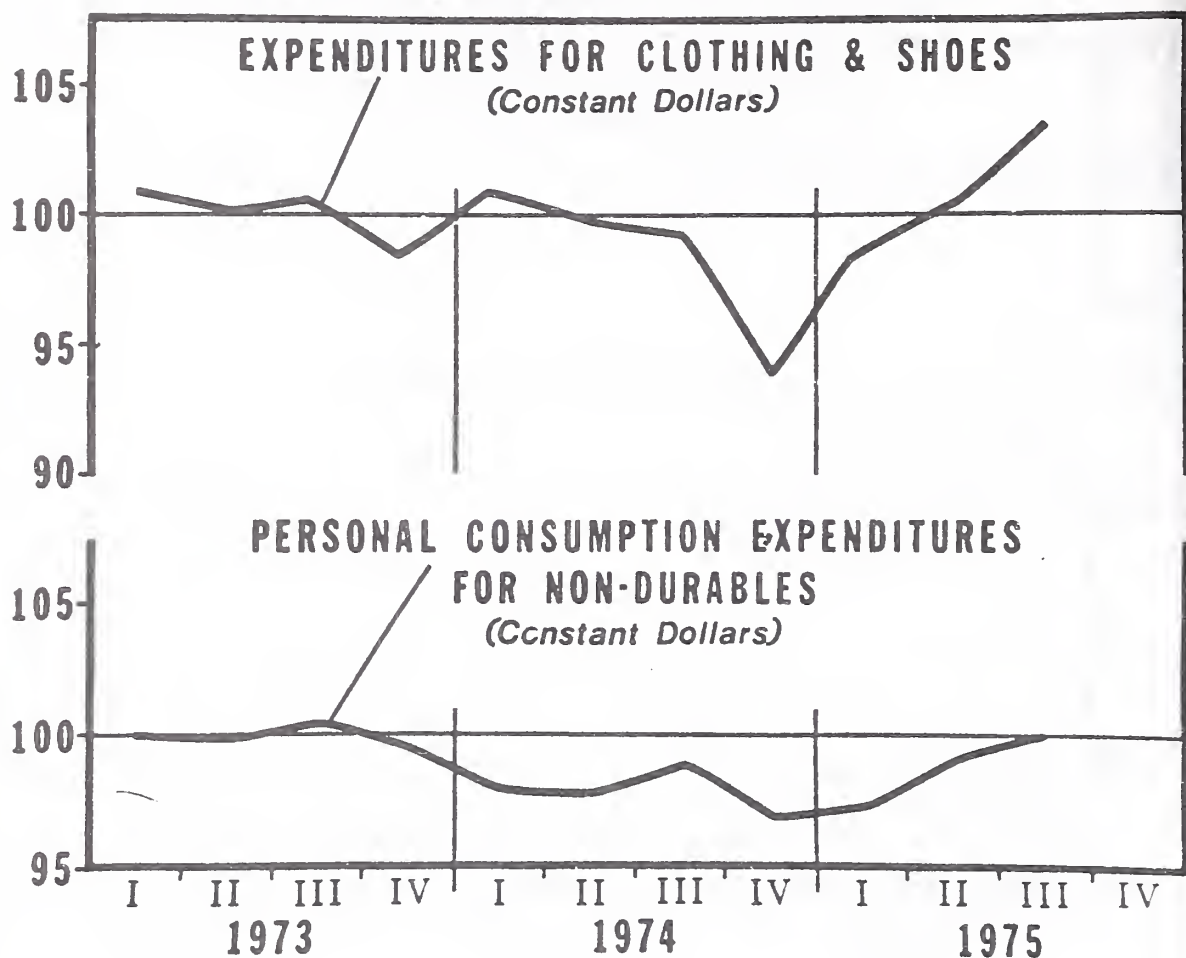


CHART 4

For these reasons, it seems plausible that the growth rate in fiber consumption will not substantially exceed the projected rate of increase in per capita disposable income (Chart 1). On this basis, 1967 U.S. mill fiber consumption could match the record level of 1973. The September annual rate was only 3.5 percent below 1973 and textile mills report strong sold-ahead positions through first quarter 1976. Using this rate as a lower level provides a 1976 consumption range of 24.5 million bales (the approximate September annual rate) to 25.5 million bales (the 1973 record high).

We have been examining the total fiber market, now let's turn our attention to the outlook for cotton. After many years of market share losses, it is significant that cotton's percentage share of U.S. mill fiber consumption stood at 29.4 percent in September, just 0.4 percentage points below its 29.8 percent share during calendar 1973. A look at competition in apparel, home furnishings, and industrial applications will facilitate a better understanding of cotton's competitive position and outlook in the overall market.

About half of U.S. mill cotton consumption goes into apparel production. As Russell Barlowe has already stated, the current "natural look" fashion trend has helped to sustain demand for traditionally high cotton-content fabrics such as denim and corduroy; but, significantly, it has enabled cotton to broaden its base of "fashion-right" fabrics. We think chances are good for apparel market share improvements in 1976.

Home furnishings account for 35 percent of cotton consumption. There are both positive and negative trends developing in home furnishings and uses. For instance, a favorable fashion trend in upholstery fabrics and retail piece goods plus a bottoming out of durable press-related losses in sheets are bright spots for cotton, while renewed losses to polyester in towels tend to darken the picture. We think a 1976 market share projection of "no change" to "slightly lower" seems reasonable for home furnishings.

Industrial applications account for 15 percent of annual cotton consumption. The high strength/low bulk characteristics of most man-made fibers affords them a tremendous edge in many industrial markets such as coating substrates, belting, hose, tarpaulins, and others where processing technology has advanced enough to permit them to capitalize on this characteristic. The outlook, therefore, is for further competitive losses in industrial uses.

Fortunately for cotton, its present fashion-oriented strength lies in the largest cotton consuming sector—apparel. This could have dangerous implications for the future, of course. Fashion has a way of changing, sometimes unpredictably. Cotton's biggest competitive weakness is in the smallest cotton consuming sector—industrials.

Another positive factor is cotton's present price relationship with polyester and rayon. We agree with Russell Barlowe's evaluation that at least we are not at a serious price disadvantage at the moment, nor do we expect to be during the present season. It is important to remember, however, that man-made fiber producers are heavily committed to capacity expansions; and they have the capability to adjust prices (on a short term basis) to competitive market conditions. Over the longer term, of course, fiber prices have to be high enough to cover costs and to provide a return on investment sufficient to attract expansion capital. We believe man-made fiber prices must go still higher to justify capacity expansion.

On balance, we see the near term domestic market outlook for cotton as being more positive than it has been for many months. For the present crop year, we think consumption will be near the upper end of USDA's projected range of 6.8 to 7.3 million bales.

COTTON EXPORTS

The export outlook for U.S. cotton currently is in sharp contrast to the domestic market situation. Current indications in the foreign trade area continue to point to a decrease in our exports this season. Many private trade members seem to be of the opinion that exports will be substantially less than currently projected by USDA. The factors responsible for this gloomy export outlook for 1975-76 actually developed in 1974-75. The two main factors were as follows:

1. The build-up of record levels of carryover stocks in the foreign exporting countries on August 1, 1975, which apparently had the effect of holding price quotations from several of the major exporting countries well below quotations on U.S. cotton during the early months of this season.

2. Continuing weakness in the rate of recovery from the economic recession has depressed demand for textiles in most of the major non-Communist importing countries.

Despite the weaker outlook for U.S. exports in the 1975-76 season, there are some developments currently under way in the foreign cotton situation which could paint a brighter picture for U.S. cotton exports in the 1976-77 season. For example, on the supply side, current estimates indicate that foreign production of cotton may be down as much as 4 million bales or more in 1975-76. This expected record decline in foreign production will likely result in a significant drop in the carry-over stocks of cotton in the hands of exporting countries during this season. In turn, a prospective decrease of this magnitude in the supply of foreign cotton could result in higher prices for some of the foreign growths later this season, helping to reduce the current price disadvantage for U.S. cotton in the world markets. In that case, U.S. export sales could begin to recover from the currently depressed level. Any recovery in U.S. export sales which might be expected as a result of these price developments probably would come too late in the 1975-76 season to provide a significant boost in actual U.S. exports this season. However, such developments would provide a much healthier outlook for exports in the 1976-77 season.

On the foreign demand side, there still is not enough positive evidence to suggest that foreign consumption of cotton will recover significantly in 1975-76 from the depressed level of 1974-75. On the other hand, if foreign production of cotton really does drop as much as 4 million bales this season, as current estimates suggest, then only a modest increase in foreign consumption of cotton (of say one million bales) would help to widen the gap between foreign production and foreign consumption of cotton in 1975-76 to the highest level since 1961. Actual U.S. cotton exports are expected to fall substantially below that potential for this season, so foreign cotton stocks would have to help fill the gap and, therefore, are expected to decline significantly. These positive factors have favorable implications for cotton exports next season, but they seem likely to occur too late to help U.S. exports very much this season. Therefore, it appears at this point that 1975-76 cotton exports will be hard pressed to reach even the low end of USDA's current export range. However, we must remember that exports are notoriously unpredictable.

Obviously, it is too early to provide realistic estimates of the exact levels of foreign cotton production and the foreign demand for cotton in 1976-77. But there are some observations we can make concerning current developments in the foreign cotton situation which may have important implications for the foreign supply-demand situation in 1976-77.

First, on the supply side. Recent trade reports indicate that cotton farmers in some foreign countries are reluctant to sell their current crop for prices being offered at this time. Trade reports also indicate that cotton plantings currently under way in Southern Hemisphere countries may be reduced from earlier expectations, further reflecting producers' dissatisfaction with current prices. This seems to indicate that any increase in foreign cotton acreage next season will depend largely on whether prices rise from current levels.

On the foreign demand side, it should be kept in mind that the pace in foreign economic recovery has been lagging behind the U.S. recovery rate up to now. However, most current economic forecasts

tend to suggest that the pace in economic recovery in most of the major foreign importing countries should pick up before the end of the current cotton year. This should provide the impetus for at least a further moderate increase in foreign cotton consumption in 1976-77. So, while current conditions indicate a low level of U.S. exports this season, we can foresee a good possibility for a significant recovery in U.S. cotton exports for next season.

U.S. COTTON SUPPLY

An examination of cotton planting expectations in the United States for the next season is essential to a cotton outlook. Cotton farmers have had two consecutive difficult years. Yields have been low while production costs per acre have increased. The combination of lower yields and higher input costs has placed the average cotton farmer in a real cost/price squeeze. The beltwide average production cost per acre for 1975-76 is estimated at \$275 to \$280, and based on USDA's 466 pound November yield estimate, the average per pound production cost would be about 52 cents. At these cost levels, the question now is, what are the producers' planting intentions for the 1976 crop?

There are many factors that enter into the planting decision; but perhaps the two factors that carry the most weight are weather and the expected costs and returns from cotton compared to other crops.

A comparison of relative costs and returns should be based on expected prices, costs, and yields. All of these are, of course, subject to change. However, cotton prices are up from the pre-plant levels of last spring. If December 1976 cotton futures remain steady, and that is a big "if," the expected cotton price would be 7 to 9 cents higher than in the previous year. A higher price would make cotton fare better in a relative cost and returns comparison. For instance, in order to return an equal amount over and above all production costs except land, Delta region cotton with a 500-pound yield selling for 50 cents would equal soybean revenue at a selling price for beans of \$6.12 at a 25-bushel soybean yield. If the cotton price was only 42 cents, using the same 500-pound yield, the soybean price required to give an equivalent return would be only \$4.52/bushel. All the present, cotton prices are higher in relation to soybeans and also grain sorghum than they were at planting time last season.

TABLE 2.—COTTON ACREAGE ESTIMATES-1976

[In thousands of acres]

Region	1976	1975	1976 as percent of 1975
Southeast.....	916	885	104
Delta.....	3,145	2,950	107
Southwest.....	5,420	4,970	109
West.....	1,220	1,320	92
United States.....	10,701	10,125	106

To obtain a feel for what acreage might be planted in 1976, we surveyed the Cotton Extension Specialists in each of the 14 major states.

The results of that survey are shown in Table 2. Based on the futures price relationships that existed the first of November, it was estimated that 10.7 million acres would be planted to upland cotton in 1976. This is a 6 percent increase over 1975 acreage. As shown in Table 2, all regions but the West are expected to increase their planted acreage. Changes in price between now and actual planting, however, could considerably change the farmers' planting intentions. For instance, it was estimated that if the farmers felt they could receive 55 cents for SLM $1\frac{1}{16}$ " cotton with prices for competing crops remaining near current levels, 11.6 million acres would be planted. Of course, a lower price would send planting intentions in the opposite direction.

Weather will also play a key role. Insects were severe this past season and many producers are hoping for a cold winter in order to reduce the over-wintering insect populations. Also, the weather at planting time will determine whether or not farmers are actually able to plant their intentions.

SUMMARY

Our current crop was planted late and is maturing late. Only 30 percent has been ginned as of November 1. Normally, about 50 percent would have been ginned. Trade members feel that recent heavy rains in the Mid-South may have further reduced the amount that can be harvested and that actual 1975 cotton production will be down from the November 1 USDA estimate.

Domestic mill consumption is estimated to be near the upper side of the USDA estimate of 6.8 to 7.3 million bales. Exports are currently expected to fall near or below the lower end of the USDA estimate of 3.5 to 4.0 million bales. If these estimates materialize, the ending carryover on July 31, 1976, will likely fall near or a little below the midpoint of USDA's 3.6 to 4.6 million bale estimate.

We have indicated that prospects appear good for 1976-77 off-take to exceed the 10.5 million bales expected for 1975-76. Therefore, a 1976 production level of over 10.5 million bales seems needed to avoid a further reduction from the August 1, 1976, carryover level. If these prospects prove to be reasonably accurate, the market could support somewhat larger plantings next spring.

INTERNATIONAL SUGAR OUTLOOK

[By Gordon E. Patty, Sugar and Tropical Products Division, Foreign
Agricultural Service, USDA]

After a year of generally falling prices, following the unprecedented high reached in November a year ago, we can now look ahead to a little more stability in the coming year. A new larger crop is in prospect which should improve the stock situation. Several important trading countries have signed bilateral agreements, which have eliminated some of the uncertainties connected with the expiration of the U.S. Sugar Act and the Commonwealth Sugar Agreement. During 1975, there has not been aggressive buying by the USSR on the world free market, although there have been persistent unconfirmed reports of this. Consumption is again expanding at the usual level as prices have adjusted downward.

According to a new estimate just released today in time for this meeting by the Foreign Agricultural Service, the 1975/76 world sugar crop is estimated at about 83 million metric tons on a raw value basis. This compares with the 1974/75 last estimate of 79 million tons. This increase is mainly due to expanded beet plantings, particularly in Europe and the United States. Cane production is also a little higher in the current year. Weather conditions have been more favorable than a year earlier. World production of beet sugar is around 33 million tons or 40 percent of total 1975/76 sugar output while cane production of 50 million tons accounts for some 60 percent. World consumption of sugar is expected to be around 82 million tons. World output of 83 million tons, although a record, just exceeds world consumption. Carryover at the end of 1975/76 will be only slightly larger than at the beginning of the year, when world stocks were a rather low 15 million tons.

Most of the large producing countries are registering increases over a year earlier. The major exceptions are Brazil, Argentina, Cuba, and India. Both Brazil and Argentina were hard hit by severe frost in July. In Brazil the frost damaged sugarcane in the States of São Paulo and Parana and output has declined to an estimated 7.0 million tons from 7.4 million a year earlier. Cuba's output was reduced by drought that ended earlier in the year. In India, production is 500,000 tons lower because of wet and cloudy conditions in some areas.

In the USSR, the new crop is an estimated 9.0 million tons, compared with 7.7 million tons the year before when the weather was not conducive to sugar production. Production in most of the other European countries is also up this year, as considerably more acreage was planted to beets than a year earlier. Output in Europe, not including the USSR, is about 17.9 million tons, over 2 million tons above the previous year. Production in Poland is nearly 500,000 tons higher this year.

The United States is expected to produce an estimated 650,000 tons more of beet sugar in the current year over a year earlier. Cane sugar output is nearly 200,000 tons larger on the continent, while there is little change in Hawaii and Puerto Rico. These expanded acreages, both here and in Europe, were encouraged by the higher prices prevailing early in the season.

In the Philippines, output is up by 100,000 tons. Production in Thailand, Turkey, the People's Republic of China, and Indonesia is also up in 1975/76. Production in Australia is about the same this year as a year earlier.

New mill construction has not risen significantly despite the earlier price rise. With the drop in prices during the past year, this continues to be true. Investors have been more cautious during the recent price upswing than they were during the one in the early 1960's. Investment costs are also much higher. France, reportedly, has a new plant under construction with a 14,000 ton daily beet capacity. The USSR also has a new small mill in operation. A new U.S. beet factory began operating this fall in southern Minnesota. Several new mills are under construction in Australia, Morocco, the Philippines, Thailand, and Mexico, among others. Brazil has a modernization program under way and Cuba has announced one.

Several countries have signed new bilateral agreements. The USSR and Cuba have signed a second agreement. The USSR is to pay about 17 cents per pound for Cuban sugar. Australia and Japan also have an agreement for 600,000 tons per year for 5 years beginning July 1975. The PRC has new agreements to buy sugar from the Philippines and, reportedly, Brazil. Japan also has agreements with South Africa and Thailand. The EC Agreement with the African Caribbean Pacific (ACP) producers for 1.2 million tons annually for 5 years will provide minimum supplies for the United Kingdom.

The International Sugar Council is meeting this month to discuss the international sugar situation and the United States is participating as an observer. We are expecting a decision regarding negotiations leading to a new sugar agreement.

Another meeting of the Latin American sugar producers was held recently in Peru and world production was estimated at 81 million tons. This is low, according to our estimates. In any case, the producers group would only have about 50 percent of world exports and does not appear to have reached its objective of stabilizing world prices as yet.

In summary, the year 1976 appears to be a continuation of present conditions. Production will slightly exceed consumption while some of the previous uncertainties regarding agreements have been resolved. Stocks will continue at a fairly low level, although increasing slightly. All in all, if no unforeseen circumstances arise, 1976 should be a fairly normal year.

DOMESTIC OUTLOOK FOR SUGAR

[By Fred Gray, Commodity Economics Division, Economic Research Service, USDA]

THE WORLD SITUATION

A record 1975/76 world crop of about 91.5 million short tons (raw value) is anticipated.¹ If realized, this crop will be 4.4 million short tons larger than the 1974/75 crop, and 2.9 million tons larger than the record 1973/74 crop. The increase is coming largely from expanded sugarbeet acreage, which was stimulated by last year's high sugar prices.

World consumption for 1975/76 appears likely to total as much as 90.4 million short tons (raw value). If realized, this level will represent a 2 million ton increase over 1974/75 consumption. After being depressed by very high sugar prices last year, consumption is beginning its return to previous levels in several industrialized countries.

World sugar stocks are expected to total about 17.5 million short tons (raw value) at the end of 1975/76. If realized, this level will represent a 1.1 million ton increase over 1974/75 ending stocks, and will reverse the downward trend in world stocks exhibited over the last 4 years.

RECENT TRENDS IN WORLD PRODUCTION, CONSUMPTION, AND STOCKS

[In thousands of short tons, raw value]

Year beginning May 1	Production	Consumption	Ending stocks
1970-71.....	77,739	80,231	22,941
1971-72.....	77,818	82,527	18,232
1972-73.....	83,027	84,750	16,509
1973-74.....	88,576	87,632	17,453
1974-75 ¹	87,100	88,200	16,353
1975-76 ²	91,500	90,400	17,453

¹ Preliminary.

² Forecast as of Nov. 14, 1975, subject to revision.

Source: Foreign Agricultural Service, USDA.

THE U.S. SITUATION

MORE ADEQUATE SUPPLIES

U.S. Production.—U.S. sugarbeet harvested acreage is expected to total about 1.5 million acres, up 24 percent from a year ago. The 19.5 ton average yield estimate per acre is up over a ton from a year ago, reflecting the relatively good growing conditions seen since August 1.

¹ The crop years discussed here include all production which begins not earlier than May of one year, not later than April of the following year, even though actual production may fall outside the May/April season.

The prospective 1975/76 sugarbeet crop will total about 29.4 million tons and be over 7.0 million tons or 33 percent larger than 1974 crop. If realized, this crop will be slightly larger than the 1972/73 record of 28.4 million tons.

Sugarbeet production is expected to be up this fall in all 17 growing States. Production in the States of Minnesota and North Dakota may be up over a fourth from 1974, despite heavy summer rains which flooded out 35,000 acres of sugarbeets. Abundant rainfall has increased yields in the area's remaining fields and 50,000 acres of beets are coming on stream to supply a new growing cooperative facility in Renville, Minnesota.

Under one-third of the fall beet crop is expected to come from the North Central States, 25 percent from the Northwest, 28 percent from California, and 14 percent from other Southwestern States.

Based on November 1 growing conditions and a normal sugar recovery, this year's beet crop is expected to produce about 3.8 million tons of sugar (raw value)—up sharply from 2.9 million tons produced in 1974/75. And there is some concern within the industry about its capacity to process this large crop within the normal time frame.

U.S. Sugarcane.—U.S. harvested acreage of sugarcane will likely total 778,000 acres this year, up 6 percent from 1974. Acreage for harvest expanded in Texas, Florida, and Hawaii and remained unchanged in Louisiana. Estimates indicate the 1975/76 crop will total about 29.2 million short tons—making it 4.2 million tons or 17 percent larger than the 1974 crop. If achieved this crop will total nearly a million tons larger than the 1972/73 record crop of 28.3 million tons. This year Florida will produce about 34 percent of the domestic sugarcane crop, Hawaii about 36 percent, Louisiana 26 percent, and Texas over 4 percent. Based on November 1 growing conditions, sugarcane acreage currently indicated for harvest, (less deductions for seed cane acreage) and given a normal sugar recovery rate for each producing area, production of around 2.8 million tons of cane sugar (raw value) is indicated.

RECENT ANNUAL TRENDS IN DOMESTIC SUGAR CROPS

Description	Unit	Sugarbeets			Sugarcane		
		1973	1974	¹ 1975	1973	1974	¹ 1975
Acreage for harvest.....	1,000 acres.....	1,218	1,213	1,506	741	733	788
Yield per acre.....	1,000 tons.....	20.1	18.2	19.5	34.1	34.1	37.5
Production.....	1,000 tons.....	24,499	22,118	29,388	25,827	24,975	29,204
Production of sugar.....	1,000 tons ²	3,200	2,916	(³)	2,549	2,502	(⁴)
Yield of sugar per acre.....	do ²	2.63	2.40	(³)	3.63	3.61	(⁴)
Recovery rate.....	Percent ²	13.06	13.18	(³)	9.87	10.02	(⁴)

¹ Preliminary estimate.

² Raw value basis.

³ Forecast of about 3,800,000 tons. Yield of sugar per acre and recovery rate will vary depending on actual production.

⁴ Forecast of about 2,800,000 tons. Sugar yield and recovery rate will vary depending on actual production.

Source: Statistical Reporting Service, USDA, 1975 forecast of sugar production—Economic Research Service, USDA.

U.S. Imports.—U.S. imports will fall far short of the 5.77 million tons imported last year. Based on the pace of imports for the first 8 months, U.S. imports for calendar year 1975 will likely range between 3.5 to 4.1 million tons (raw value).

Of the five normally largest foreign suppliers, only the Dominican Republic was supplying quantities near last year's export volume to the United States. Through August 30, 1975, its shipments to the United States were 85 percent of last year's volume. Comparable figures for the other four countries were Brazil—17 percent; Mexico—8 percent; Peru—20 percent; and the Philippines—13 percent.

U.S. UTILIZATION SLOWLY COMING BACK

U.S. Deliveries.—U.S. sugar deliveries to domestic users totaled 3.1 million tons (raw value) during the third quarter of 1975, down nearly 90,000 tons, or nearly 3 percent, from the third quarter of 1974. So far this year, only deliveries during the month of July exceeded monthly deliveries in 1974.

Through the first 10 months, sugar deliveries fell to 8.55 million tons, down 10 million tons, or nearly 16 percent compared with the first 9 months of 1974. However, monthly deliveries since July have been running near 90 percent of 1974 levels.

Based on the trend for the most recent 12 consecutive months, deliveries for calendar year 1975 will likely total around 10 million tons, down sharply from 1974 deliveries of 11.24 million tons.

U.S. Consumption.—With declining deliveries per capita consumption of sugar will probably be less than 90 pounds this year. This level compares to 97 pounds in 1974, and 102 pounds in 1973, and will be the lowest level since the sugar-short years during and following World War II (1942–46).

Most of this year's prospective decline in per capita consumption was recorded in the first and second quarters. Consumption in the third quarter was only slightly below consumption during the third quarter of 1974. Consumption in the fourth quarter may exceed that of a year ago, since consumption dropped sharply in December last year in response to record November sugar prices.

U.S. Exports.—Before 1974 U.S. sugar exports seldom exceeded 8,000 short tons (raw value) annually. But last year, due in large part to tight world supplies, and very high prices, U.S. exports exceeded 70,000 tons. This calendar year, exports will likely exceed 150,000 tons. Canada, this year is receiving more than half of our sugar exports.

RECENT TRENDS IN U.S. IMPORTS, DELIVERIES AND CONSUMPTION

Calendar year	1,000 short tons—raw value		Per capita consumption (pounds refined sugar)
	U.S. imports	U.S. deliveries	
1970.....	5,296	11,310	102.5
1971.....	5,587	11,288	102.4
1972.....	5,455	11,415	103.0
1973.....	5,329	11,482	102.1
1974.....	5,777	11,235	97.0
1975 range.....	3,540–4,070	9,800–10,200	85.0–90.0

Source: U.S. imports and deliveries from "Sugar Reports," Agricultural Marketing Service, USDA. Per capita consumption and 1975 forecast, Economic Research Service, USDA.

U.S. STOCKS UP: DECEMBER 31 LEVELS UNCERTAIN

On November 1, total domestic sugar stocks of 1.33 million short tons were up over 160,000 short tons (raw value) from a year ago. November 1 beet sugar stocks of 613,000 tons were up only 27,000 tons from last year.

Beet sugar companies appear to have largely succeeded in their attempts to work down beet sugar stocks by the end of the 1974/75 crop year to make way for the large 1975 crop now being harvested. With expectations of a larger 3.8 million ton beet sugar crop, beet sugar companies may market sugar aggressively this fall as they make room for the new crop. Based on large July shipments to domestic users, cane sugar companies may have overbought in mid-year in anticipation of larger domestic sales in August and September which didn't materialize. Consequently, both beet sugar processors and cane sugar refiners are expected to attempt to have sugar stocks as low as possible by the end of 1975.

THE PRICE SITUATION

Raw Sugar Prices.—U.S. raw prices have been closely paralleling changes in the world price. After steadily declining from last year's November peak price, the New York spot increased from a low of \$15.96 per cwt. in June, reached a summer high of \$21.11 cwt. in August, and then again declined to \$15.45 per cwt. in October. Much of the recent decline in both world and U.S. raw sugar prices can be explained by the onset of fall harvest and prospects of more sugar entering the marketing channel. World and U.S. prices both averaged about \$57 per cwt. last November. This November the U.S. price will likely average about \$15 per cwt. with the world price about \$1.40 per cwt. lower. Thus, raw prices today are only about a fourth as high as a year ago.

Wholesale Prices.—After declining steadily from November/December, 1974, peaks, U.S. wholesale refined sugar prices in all marketing territories strengthened last June, and July, peaked in August in the upper \$20.00's per cwt. range, and then turned downward again. Since August, refined sugar prices have trended downward, while showing brief periods of strength. October wholesale prices have averaged just over \$20 per cwt. November prices may nearly approximate the October level.

Retail Sugar Prices.—U.S. retail sugar prices have lagged behind declines in raw and wholesale sugar prices. While the summer peak for raw and wholesale refined sugar occurred in August, retail prices did not peak until September. October and November U.S. retail prices are expected to reflect some of the downward movement in raw and refined sugar prices which have been recorded since August.

Prices of Sugar-Containing Products.—While retail sugar prices have changed significantly in recent months, prices of sugar-containing products have changed only slightly. Some slight price decline is anticipated in coming months. However, retail prices of several products will likely change little, and increases may be registered for a few items. With costs of other inputs increasing rapidly, the recent decline in sweetener prices was not translated into substantially lower prices for sugar-containing products.

RECENT TRENDS IN SUGAR PRICES

[In cents per pound]

Year and month	Raw sugar			Refined sugar			
	World price New York basis	U.S. sugar price (New York spot)	Difference between United States and world prices New York basis	Cane sugar— Northeast ¹	Beet sugar		U.S. average retail ²
					Chicago west ¹	Pacific Coast ¹	
1965.....	3.07	6.75	3.68	10.22	9.15	9.24	11.80
1966.....	2.82	6.99	4.17	10.36	9.44	9.55	12.04
1967.....	2.95	7.28	4.33	10.62	9.70	10.11	12.19
1968.....	2.96	7.52	4.56	10.84	9.94	10.35	12.18
1969.....	4.37	7.75	3.38	11.44	10.23	10.14	12.40
1970.....	4.88	8.07	3.19	11.97	11.08	10.80	12.97
1971.....	5.65	8.52	2.87	12.48	11.59	11.37	13.61
1972.....	8.54	9.09	.55	13.09	11.82	11.65	13.91
1973.....	10.99	10.29	-.70	14.07	12.38	12.38	15.10
1974.....	31.62	29.50	-2.12	34.35	32.07	31.90	32.34
1974:							
January.....	16.87	12.63	-4.24	15.65	14.64	14.79	16.96
February.....	22.83	17.09	-5.74	18.49	17.80	19.02	17.76
March.....	22.86	18.11	-4.75	20.90	20.18	22.23	20.80
April.....	23.40	19.25	-4.15	23.78	21.99	23.35	22.96
May.....	25.40	23.05	-2.35	27.61	26.65	26.78	24.86
June.....	25.40	26.30	.90	31.04	30.40	29.88	28.32
July.....	27.06	28.35	1.29	32.50	32.15	30.10	32.14
August.....	33.08	32.60	-.48	36.83	33.93	33.15	34.88
September.....	35.95	33.71	-2.24	40.74	36.19	35.00	37.96
October.....	41.30	38.83	-2.47	43.59	40.17	41.21	41.68
November.....	58.84	57.30	-1.54	60.69	54.68	54.04	46.94
December.....	46.55	46.74	.19	60.41	6.02	53.22	62.76
1975:							
January.....	39.79	40.15	.36	52.95	46.35	46.35	58.92
February.....	35.22	36.07	.85	48.96	41.99	41.68	53.60
March.....	28.00	28.52	.52	40.50	33.88	34.30	49.52
April.....	25.56	26.07	.51	37.01	30.80	31.80	41.80
May.....	18.81	19.27	.46	32.23	25.33	26.73	36.86
June.....	15.25	15.96	.71	25.57	21.14	21.64	31.44
July.....	18.48	19.89	1.41	26.89	22.17	22.02	26.88
August.....	20.18	21.11	1.01	27.05	26.18	25.95	30.90
September.....	16.84	17.36	.52	23.30	25.35	23.47	32.08
October.....	15.48	15.45	-.03	21.15	20.44	20.77	-----

¹ These are basis prices in 100-lb paper bags, not delivered prices. To obtain prices, add "Freight prepaids" and deduct discounts and allowances.

² U.S. average for cane and beet sugar.

Source: Retail price from Bureau of Labor Statistics U.S. Department of Labor; all other prices from "Sugar Market News," Agricultural Marketing Service, USDA.

OUTLOOK FOR 1976

WORLD SUPPLIES ADEQUATE BUT NOT OVERABUNDANT

The projected 4.4 million ton increase in the 1975/76 world sugar crop would provide adequate supplies to meet expected consumption levels and maintain stock levels until the 1976/77 crop is harvested. But world supplies are not expected to be overabundant.

U.S. DELIVERIES TO INCREASE

U.S. sugar deliveries next year are expected to range from 10.3 to 10.9 million tons, raw value. Several trade sources believe 1976 calendar year deliveries will likely range from 10.6 to 11.2 million short tons. Per capita consumption of refined sugar next year is expected to recover from this year's low level and will likely range between 90 to 95 pounds.

U.S. IMPORTS TO INCREASE

U.S. imports of sugar are expected to increase slightly next year; and be perhaps 200,000 to 500,000 tons larger than this year's imports. The actual level will depend on the level of U.S. production and consumption, prices, and U.S. production of high-fructose corn sirup.

U.S. PRICE OUTLOOK FOR 1976

Since June, the daily U.S. raw sugar price (New York Spot) has ranged from \$14 to near \$24 per cwt. It increased from a monthly average low of \$15.25 in June to a monthly summer high of \$20.10 in August, before trending downward to the current level of \$15 per cwt (New York spot, November 12). The current level is close to the cost of producing sugar in several locations in the world.

In response to last year's high prices, production in 1975/76 is expected to be up 5 percent. However, stocks are not expected to be excessive, since per capita consumption in the United States and other industrialized countries is expected to increase—Japan, an exception, has delayed importing sugar.

With no major shocks or surprises in the outturn of the 1975/76 crop, there will likely be some price variations and perhaps some seasonal strengthening in 1976. But there appears little basis for any material change in levels of raw prices from levels in the recent past.

LONG-RANGE CONCERNS OF INDUSTRIAL SWEETENER USERS

[By Dr. Marvin L. Hayenga, General Foods Corporation, White Plains, N.Y.]

There are several critical business issues facing the sweetener industry—both producers and users—in the United States. After experiencing perhaps the most volatile market situation in the sweetener industry, several significant and possibly unprecedented changes have occurred within the industry.

While consumer behavior now appears near normal, there was a period last year when sugar deliveries surged, then plummeted, as sweetener consumers and industrial users reacted sharply to sugar-price movements, negative economic growth, and a cash-flow crunch. Much of this was due to pantry or factory inventory fluctuations. While it's very difficult to determine how much actual consumption of sweetener-using products changed in the home, there was an obvious public awareness and shift in the product mix as the recession and the sugar price surge overlapped.

As sugar prices surged, we noted a dramatic increase in the sensitivity of industrial sugar users to sweetener price fluctuations. Not only did sweetener purchasing decisions become the focus of management attention in many food industries but there was a sharp stimulus to investigate and switch to alternative sweeteners, particularly corn sweeteners.

With profit expectations sharply increased due to the simultaneous surge in demand and price for corn sweeteners, the corn wet milling industry is intensifying its production of high-fructose corn syrups, which are a very close substitute to liquid sugar in many product applications. Not only do corn wet millers feel that this is the wave of the future, so do some major sugar processors.

While the traumatic moments brought on by the price surge now appear to be behind us, there is a great uneasiness among many industry members. They fear that the sharply lower prices we have experienced recently may stifle growth in sugar production here and abroad, and cause a recurrence of the trauma we have recently gone through. To better guide major investment decisions throughout the sweetener industry—from producer through the major users—the industry needs a much clearer picture of likely sweetener market developments over the next decade. This is an important issue that I offer as a challenge to the economists in the audience who are public servants in the government or universities, and to those market analysts working in the sweetener industry who may have had similar questions raised by their bosses.

It's quite obvious that the sweetener industry is concerned particularly with short-term outlook questions concerning the:

- (a) likely changes in sugar production in major producing countries as new developments occur,
- (b) changing consumption levels in major consuming countries in response to most likely economic growth and market price patterns,
- (c) different policy changes which might be likely, and
- (d) the ultimate question, "What are the most likely absolute *and* relative price patterns for raw cane sugar, refined beet sugar, and the primary corn sweeteners—dextrose, corn syrup and high-fructose corn syrup?"

Obviously, timeliness as well as accuracy in assessing these changing fundamentals have to be the critical factors in a market where small changes in fundamentals can trigger large price adjustments, and where the necessary statistics are notoriously "soft," or simply unavailable from some major producing countries.

While these short-term questions are undeniably important to all elements within the sweetener industry, I believe that the industry's long-term supply and price outlook issue of even greater importance.

Today, relatively little attention is being given by the research community to this issue. Yet expectations about longer-term availability and relative prices of competing sweeteners have an effect on all elements of the industry. For example, they have a significant impact on the acreage put into sugar cane or beets here and abroad, the number of sugar processing plants or refineries which are built or allowed to deteriorate, the rate of investment in corn wet milling plants, and the portfolio of new or modified sweetener-using products on which food processors elect to spend their research and development time and money.

To improve their investment and resource allocation decisions, nearly all industry members are searching for better insights into:

- (1) Probable sugar cane and beet acreage and yields worldwide.
- (2) Likely changes in government policies affecting producer and consumer prices, investment incentives, consumption within the country, and import-export policies.
- (3) Consumption projections under alternative economic growth and population scenarios.
- (4) Likely changes in the production of competing corn and non-caloric sweeteners and the relative price differentials between these sweeteners and sucrose.
- (5) The probability of new sweeteners being developed and their impact on the sweetener market.

I envision that the dominant influence in the world sweetener market will continue to be the relative growth in production and consumption of cane and beet sugar, with total sugar consumption being impacted slightly by the growth in corn sweetener production, primarily in the United States. However, small changes in production or consumption will continue to cause sharp price fluctuations. The insights which you could provide from a thorough analysis of these issues can lead to better decisions by small and large producers, processors and users of sweeteners, and public officials determining government policy here and abroad. If we can avoid or minimize mistakes which can contribute to cyclical gyrations in supply and prices in the sweetener industry, I feel confident that the long-run result would be a more stable industry environment leading to consumer prices lower than they otherwise would be.

IMPACT OF SWEETENERS FROM CORN

[By Donald H. Francis, President, Clinton Corn Processing Company, Division of
Standard Brands Incorporated, Clinton, Iowa]

INTRODUCTION

Many people are misled by the term "sweeteners from corn". They assume that either the corn grain or the corn stalk contains a sweetener which is isolated much as sucrose is isolated from cane or beets. Such is not the case. Sweeteners from corn are all derived from corn starch which is first isolated from shelled corn by the wet-milling process.

In this process the isolated corn starch is highly purified and when filtered and dried, is sold as food grade corn starch. When sweeteners are to be made from starch the final filtration and drying steps are not performed. Instead corn starch, suspended in water, is hydrolyzed by acid and/or enzymes to produce water solutions of various sugars, such as dextrose and maltose. Sucrose is never produced in this reaction.

After partial hydrolysis the syrups are refined to obtain aqueous solutions of nutritive saccharides. These are the mildly sweet, conventional corn syrups which have been widely used in food and industrial applications for years. If the hydrolysis is carried to completion and the resulting solutions refined and concentrated, crystalline α -d-glucose can be crystallized, removed by centrifugation and dried to yield dextrose. All of these sweeteners from corn have been available for many years.

In 1968 a new sweetener, high fructose corn syrup (HFCS) first became available on a limited commercial basis in the United States. In this new process, solutions containing about 95% glucose are subjected to the action of an enzyme, glucose isomerase. This enzyme isomerizes or converts about 50% of the glucose present to the much sweeter monosaccharide, fructose. For the first time a carbohydrate sweetener comparable in sweetness to sucrose or medium invert in many applications became available from domestically available corn. Some of the foods and beverages in which HFCS is currently being used in place of cane or beet sugar products are carbonated beverages, pickles, canned fruit, fruit drinks, catsup, baked goods, table syrups, ice cream fountain syrups and confections.

Since its introduction, the productive capacity for high fructose corn syrup has gradually increased to an annual rate of more than 1 billion pounds this year. There have been two principal manufacturers during most of 1975. A total of eight companies have announced that they will either start production this year or will be in operation within the next one to five years. It is estimated that the combined HFCS capacity of the announced plants will be 4 to 6 billion pounds per year by 1980. This could easily increase to as much as 9 to 10 billion pounds of HFCS yearly by 1990.

IMPACT ON THE U.S. ECONOMY

In 1974 the U.S. imported about 5.8 million short tons of raw sucrose having an estimated value of \$2.2 billion dollars. It is estimated that raw sucrose imports will approximate \$2 billion dollars in 1975. At current prices and assuming HFCS production of at least 1 billion pounds on a dry basis in 1975, the use of HFCS instead of imported sucrose will contribute approximately \$200 million dollars to our trade balance. Further, as the production of HFCS increases to 5 billion pounds per year this contribution could increase to approximately \$1 billion dollars—no small contribution to the U.S. balance of payments.

High fructose corn syrup also provides an additional domestic market for corn. The 1 billion pounds of HFCS produced in 1975 will require about 30 million bushels of corn valued at approximately \$90 million dollars (\$3.00/bu.). This market will increase to 150 million bushels or \$450 million dollars when HFCS increases to 5 billion pounds per year.

In processing corn by the wet-milling process four basic by-products are produced: steepwater, gluten feed, gluten meal and corn oil. Except for the oil, nearly all of the by-products are utilized in preparing animal and poultry feeds. As additional corn is ground for HFCS a proportionally increased quantity of these feedstuffs will become available, thereby assuring the American feeder an adequate supply of reasonably priced feed ingredients. A sizeable quantity, currently about 46% of the corn gluten feed is exported. At an average price of \$90/ton, the corn gluten feed exported in 1975 will contribute \$92 million dollars to our trade balance. When HFCS production increases to 5 billion pounds per year it is assumed that as much as 75% of the feed from the increased grind will be sold in export. At the same selling price this could generate an additional \$61 million dollars in trade balance yearly or a total in excess of \$153 million dollars.

In 1974 the U.S. imported 5.8 million short tons of raw cane sugar, equivalent to about 5.4 million short tons of refined sugar. To replace this quantity of cane sugar with HFCS would require about 324 million bushels of corn or less than 6% of the estimated 1975 U.S. corn crop.

The total 1975 corn production is an all time record. Yet in some major corn growing areas, for example Iowa, the 1975 yield per acre is well below that previously achieved, 89 versus 107. Further, corn breeders are certain that corn yields per acre can be increased dramatically in the future. Some new types of seed have the potential of doubling the yield. Consequently, it is obvious that the United States has an assured future supply of inexpensive raw material sufficient to produce enough high fructose corn syrup to replace all imported cane sugar. At the same time growth of the domestic cane and beet industry would be required to supply the increased domestic demand for sucrose in both dry and liquid form.

IMPACT ON THE CONSUMER

Only small quantities of sweeteners from corn are sold directly to the consumers. Large amounts, however, are used by the food proc-

essor in the manufacture of consumer products. Consumers have benefited from the improved properties these sweeteners impart to various processed foods.

It is difficult to back up with data the impact of these nutritive sweeteners on consumer food prices during 1974 and 1975. Although only limited quantities of HFCS were available at that time, its presence undoubtedly encouraged a rapid reduction in sucrose price as users clamored for less expensive sweeteners. The magnitude of this price differential between sugar and HFCS can be seen in the following data. The potential impact on consumer food prices, especially in times of higher sucrose costs, is significant.

Sugar prices (dollar per hundredweight)	HFCS prices (dollar per hundred- weight, dry)	Differential under sucrose	
		Amount	Percent
\$12.00.....	\$9.90	\$2.10	17.5
\$14.55.....	11.00	3.55	24.4
\$25.00.....	18.77	6.23	24.9
\$37.00.....	27.27	9.73	26.3
\$60.90.....	33.27	27.63	45.4

In 1974 sweeteners from corn supplied approximately 20% of the total nutritive sweeteners consumed in the United States. These included conventional corn syrups, HFCS and dextrose. On a per capita basis this amounted to 97 pounds of sucrose and 24.6 pounds of corn derived sweeteners. By 1980 the percentage of nutritive sweeteners consumed that are derived from corn is projected to increase to 35%, 45% by 1985 and to 50% by 1990.

Currently 23% of the sweeteners used in "Bakery, Cereal and Allied Products" is obtained from corn. This is projected to increase ultimately to 63%. "Confectionery and Related Products" which use 33% are projected to increase to 36%. "Ice Cream and Dairy Products" should increase from 37% to 64%, "Beverages" from 9% to 69% and "Canned, Bottled, Frozen Foods, Jams, Jellies and Preserves" from 33% to 74%. About 8% of the sweeteners used in the "Miscellaneous Foods" category are now corn derived. This is projected to increase to 48%.

IMPACT ON EDIBLE OIL SUPPLY

In addition to animal feedstuffs, a valuable food ingredient will be obtained from the increased corn grind to produce HFCS. This is corn oil.

Approximately 45 million pounds of high quality polyunsaturated corn oil will be produced from the corn ground in 1975 to manufacture 1 billion pounds of HFCS. This will increase to 215 million pounds when the HFCS production increases to 5 billion pounds. At current prices the value of this corn oil is approximately \$14 million and \$63 million, respectively. Thus, additional unsaturated corn oil will be made available for the food processor to supply the increased American requirements for this product.

SUMMARY

Experts in several fields have forecast that by as early as 1980 the consumption of sugar worldwide could exceed our ability to produce. From a U.S. standpoint it is impossible to grow our domestic requirements in the form of cane or beet sugar. Therefore, the development of a sweetener from corn that is essentially the same as inverted sucrose is timely to say the least. This high quality, economical and potentially plentiful domestic sweetener can be used in place of sucrose in many applications. It is essentially indistinguishable from the widely used medium-invert sugar syrups when used in equal parts with sucrose. Thus, the U.S. and some of the other developed countries that possess a starch source have the potential of being domestically self-sufficient in sweeteners. Not only does this mean significant growth potential for the corn wet milling industry in the U.S., but domestic sugar producers must also expand or we may still need to import 2 to 3 million short tons (4 to 6 billion pounds) of raws to satisfy our needs in 1990.

Under the conditions suggested above, the sugar industry would be needed primarily to produce dry crystalline sucrose or redissolved sucrose in syrup form. The wet milling industry would supply the sweetener that need not be in the form of dry or liquid sucrose. For instance, all the total invert and that portion of medium invert that is not sucrose could be produced from corn. Likewise, sucrose per se would be replaced where it is now used, but not required, for physical and/or chemical reasons.

The Sunday, November 2, 1975, issue of the Des Moines Register carried a story that was reportedly overlooked by most of the news media. It stated that Mr. Warren W. Lebeck, President of the Chicago Board of Trade, recently told the 89th Annual Meeting of the Iowa Bankers Association that "U.S. farm exports are the only thing standing between this country and a financial debacle. . . . The U.S. non-farm sector had a \$10.2 billion trade deficit in the last fiscal year while the farm sector had an \$11.9 billion surplus resulting a net trade surplus of \$1.7 billion. . . . Actually the gap (between non-farm and farm sectors) is even wider than figures suggest because a substantial portion of our agricultural imports (\$3.3 billion consists of strictly non-competitive foods—coffee, cocoa and bananas."

If we pursue this logic further the wide scale production of nutritive sweeteners from corn and the resulting reduction of imported raw sugar could provide up to an additional \$2 billion of favorable trade balance.

The quality of high fructose corn syrup being offered today need not take a back seat to any other sweetener. Even so, this is just the beginning of the potential for new and improved sweeteners from corn.

FAMILY LIVING

CLOTHING AND TEXTILES: SUPPLIES, PRICES, AND OUTLOOK FOR 1976

[By Virginia Britton, Consumer and Food Economic Institute]

CLOTHING EXPENDITURES AND PRICES

Annual spending by consumers for clothing and shoes is estimated to be about \$369 per person in 1975, according to preliminary figures for the first three quarters of the year (table 1). Although this amount is \$19 higher than in 1974, about three-fifths of this increase is accounted for by higher prices rather than by increased buying.

The price level for apparel and upkeep as measured by the Consumer Price Index (CPI) averaged 5.2 percent higher during the first 9 months of 1975 than in the same period in 1974 (table 2). Among the three apparel subgroups, men's and boys' clothing averaged 5.2 percent higher than in 1974; footwear, 5.1 percent higher; and women's and girls' clothing, 2.8 percent higher.

Trade reports indicate that retailers and manufacturers of clothing and textiles recognize the effect on their sales of higher costs to families of the basic necessities, chiefly food and fuel, in the past 2 years.¹

For example, from September 1973 to September 1975, while apparel and upkeep price levels increased 12 percent, consumers had to adapt their budgets to price increases such as 19 percent for food at home, 25 percent for medical care, 50 percent for gasoline and motor oil, 38 percent for gas and electricity and 79 percent for fuel oil and coal, as shown by the CPI. While these price increases affect all consumers, especially those with restricted or inflexible income, they affect some more than others: large families are particularly hurt by increases in food prices, older persons by increases in medical care prices, rural families by increases in gasoline and motor oil for transportation, and families in colder climates by increases in prices for heating fuel.

Trade papers summarize the retailer's current goal as to trim costs and raise profits rather than simply build sales. To this end, particular emphasis is given to inventory control and rapid turnover. Inventories have been worked down by special sales and clearance sales and are said to be lower and more balanced than a year ago. Retailers are

¹ Discussion of business trends is based on review and assessment over several months of news items in trade sources such as the *Daily News Record*, *Textile Organon*, *America's Textiles*, *American Fabrics and Fashions*, *Chemical and Engineering News*, and the *Wall Street Journal*, as well as trade reports in the *New York Times* and *Business Week* and other publications of general circulation.

striving to hold down inventories by buying closer to the season and re-ordering more often. Retailers seek "sure-sellers" or "hot movers," but fewer big ticket, low-turnover goods or fringe items, which may mean a smaller variety than in the past and fewer clearance markdowns. They want fashion and promotion goods with fresh inventories and fast turnover, even reducing quickly the prices of fashion goods. There is stepped-up merchandising of men's wear that emphasizes fashion, multiple seasons (at least four a year), and more flexibility in color, style, and fabric.

Chain retailers reported good fall 1975 sales in children's apparel and shoes, but continued strong price resistance except in hot items such as prewashed denims, corduroy sportswear, and men's leisure suits. For next spring and summer, featured items are expected to include separates and coordinates; color-coordinated goods in a range of weights; women's scarves, stoles, shawls, and other items that can be coordinated; and men's print sport shirts and casual pants. Leisure suits will vary from casual to moderately tailored, and sportswear-oriented clothing is expected to be important even for tailored clothing.

Retailers purchased about 9 percent fewer shoes (nonrubber) in the first 7 months of 1975 than a year earlier, according to estimates from the U.S. Department of Commerce. Purchases from U.S. producers declined, while imports remained about the same. In August the U.S. nonrubber shoe industry claimed that imports caused it "serious injury" and asked the International Trade Commission to put mandatory quotas on footwear from some foreign countries. In the first 7 months of 1975, retailers purchased about 56 percent of their shoes from U.S. producers—27 percent with uppers of leather (all or part), 17 percent with vinyl, and 12 percent with other materials (such as fabric and straw). About 44 percent of retailers' purchases were imported, including 21 percent with leather uppers, 16 percent with vinyl, and 7 percent with other materials. In total, about one-half of the shoes had nonleather uppers, compared with about one-third in 1970; and most shoes had nonleather soles.

During 1976, price levels for apparel will probably continue to rise as the economy revives and as increased costs are passed along. However, continued pressures on consumer income, limiting amounts for discretionary spending, may prevent any large rise in average spending on clothing in terms of dollars of constant value.

SUPPLIES OF RAW MATERIALS ²

U.S. mill use of *fibers* in calendar year 1975 will drop below 50 pounds on a per capita basis. This compares with 1974 use of 52 pounds, including about 16 pounds of cotton, 36 pounds of manmade fibers, and less than 1 pound of wool. Prior to the recent recession, fiber use hit a record of nearly 60 pounds per capita in 1972.

Although U.S. mills are using less cotton this year, mill use has been increasing since the low point reached early in 1975. Manufacture of textile mill products, which reached a low point in February 1975, had risen by 18 percent by the beginning of the third quarter, according to preliminary estimates of the Federal Reserve Board. (In

² Except where specifically noted, estimates of supplies were provided by the Economic Research Service of the U.S. Department of Agriculture.

spite of increasing production in 1975, this latest estimate was still 16 percent below the peak in December 1973.) With general economic activity improving in 1976, mill use of fibers will probably increase from the 1975 level. Although a development of natural gas shortages this winter could hinder textile operations, industrial users have been permitted since August to search out their own supplies. The Federal Power Commission's first decision, issued October 23, gave Dan River Mills of Virginia permission to buy natural gas directly from a Texas producer without regard to the federally-set ceiling on the price of the fuel. Other companies are expected to seek permission also (*Washington Post*, October 24).

With the sharply smaller *cotton* crop expected for 1975, smaller U.S. cotton supplies are expected for the current crop year, August 1, 1975 to July 31, 1976, despite much larger cotton stocks at the beginning. However, somewhat smaller exports during the current crop year will mean adequate supplies for domestic mills. U.S. mill use of cotton is expected to recover sharply this year, the exact level depending on the strength of continued recovery in general economic activity and textile production, as well as on competition from manmade fibers.

Prices for most qualities of cotton have risen from the January 1975 bottom, primarily reflecting reduced 1975 crop prospects, improving demand, and producer resistance to selling at the previous low prices. Although current prices are a little above prices for competitive rayon and polyester staple, increasing manmade fiber production cost may soon narrow the gap.

Shipments of *manmade fibers* by U.S. producers have generally been rising in 1975, and figures for August were approximately 9 percent higher than for July, according to *Textile Organon* (September 1975). However, total shipments during the first 8 months of 1975 were about 19 percent lower than in the same period in 1974. Trade papers report that several major producers of polyester filament yarns plan a new round of price increases effective with November 1975 shipments. Price increases were also scheduled for rayon staple and for triacetate filament yarns. Some fiber producers talk of prices equal to or higher than the 1973-74 highs because of increasing costs of raw material and production, and of meeting requirements under new environmental regulations. However, such prices may encourage imports, at least temporarily. A warning was issued by the president of Concord Fabrics who urged fiber producers, mills, and finishers to "exercise pricing restraint and moderation now" to avoid consumer resistance to the higher prices (*Daily News Record*, September 19).

U.S. *wool* production (apparel class) for 1975 is estimated at 10 percent below 1974 and 18 percent below 1973, and the outlook for 1976 is for continued decline. U.S. farm prices of shorn wool in 1975 are running well below prices in the previous 2 years. There are, however, very large foreign stocks of raw wool available, though foreign prices are higher than U.S. prices. U.S. mill use of raw apparel wool in 1975 has been running ahead of 1974. Further increase in wool use by U.S. mills will depend largely on the level of economic recovery and the competition of manmade fibers.

U.S. production of cattle *hides* in 1975 was about 10 percent higher than in 1974, according to preliminary estimates. The projection for

1976 is for a further 3 percent increase. In 1975 these hides may have been smaller than in the past because of lower slaughter weights of range animals than of those finished in feedlots. Slaughter weights are expected to be increasing again in 1976 as fed cattle slaughter increases. An increase in the supply of leather on the market may result from the development of techniques for skinning hogs presently used by some packers and being considered by others. New techniques for tanning pigskins to eliminate grease should result in greater use of this material for leather. Growing fashion for leather with the individual scratches and markings of the original hide and for leathers and suedes of varied colors for garments is seen by the Tanners' Council.

CONCLUSION

Prospective supplies of raw materials appear adequate for the year ahead, and production capacity is available unless hampered by a development of shortages of natural gas this winter. Prices of clothing and textiles are expected to rise as higher costs are passed along, although the increases may be moderated to avert consumer resistance. As retailers strive to hold down inventories by concentrating on fast-moving items, consumers may find a less varied selection than in the past. Stocks may be incomplete as to size and color, especially in the basic nonfashion goods, such as simple underwear, nightwear, socks, and rainwear, which may encourage buyers to purchase higher priced fashion goods.

SUGGESTIONS FOR CONSUMERS

How can consumers stretch the clothing dollar under next year's market conditions? For one thing, consumers can take advantage of the fashion for separates. Single items can be purchased at moderate cost to mix the wardrobe already owned, or special skirts or shirts can be made at home. Separates are useful for both adults and children, and are helpful in adapting the wardrobe to changes in the person's size or in the weather while allowing for variety and personal taste in the way that garments are combined. High-fashion can be introduced in the accessories purchased or handmade. Treasured bits of hand-weaving and other craft items, new or old, can be used. On the other hand, classic styling of bigger-ticket items such as coats, suits, better dresses, and street shoes helps to extend their use to a variety of occasions and through more years of wear.

Another way to stretch the dollar is to check into the various retail outlets. If basic clothing and shoes are not readily available in the fashion stores, basic items may be found in the grocery supermarkets and the variety stores, which may also carry inexpensive accessories. Buyers can also check the catalog chains, their stores and surplus stores, as well as discount shops and factory outlets. Furthermore, they can check thrift shops and charity bazaars for used separates, such as sweaters, jackets, shirts and skirts, to wear with garments already owned. Exchange plans in schools and neighborhoods help move outgrown garments to those who can use them. Consumers can cope with the changed situation, test their adaptability, and have some interesting learning experiences at the same time.

TABLE 1.—ANNUAL EXPENDITURES ON CLOTHING AND SHOES

Years ¹	Per capita expenditures		Percent of expenditures for personal consumption		Aggregate expenditures	
	1958 dollars	Current dollars	1958 dollars	Current dollars	Billions of 1958 dollars	Billions of current dollars
1929	149	77	13.0	12.1	18.2	9.4
1930-40	122	51	11.8	10.7	15.6	6.5
1941-46	151	100	11.8	12.9	20.7	13.7
1947-61	144	140	9.0	9.4	23.5	22.9
1962-65	160	170	8.4	8.3	30.6	32.4
1966	185	204	8.7	8.6	36.4	40.3
1967	184	213	8.5	8.6	36.6	42.3
1968	188	231	8.3	8.6	37.8	46.3
1969	191	248	8.3	8.7	38.8	50.2
1970	191	258	8.2	8.6	39.1	52.8
1971	197	277	8.2	8.6	40.8	57.3
1972	209	302	8.3	8.6	43.6	63.0
1973	220	334	8.4	8.7	46.3	70.2
1974	212	350	8.3	8.5	45.0	74.1
1975 ²	217	369	8.6	8.4	46.3	78.8

¹ Earlier years are grouped on basis of similarity in level of per capita expenditures in 1958 dollars.

² Preliminary figures—Average of estimates for 1st 3 quarters of 1975 (i.e., seasonally adjusted quarterly totals at annual rates).

Source: Department of Commerce.

TABLE 2.—ANNUAL PERCENTAGE CHANGE IN SELECTED INDEXES OF CONSUMER PRICES

Index	1971	1972	1973	1974	¹ 1975
Consumer price index	+4.3	+3.3	+6.2	+11.0	+9.7
Apparel and upkeep index ²	+3.2	+3.2	+3.7	+7.4	+5.2
Men's and boys' clothing	+2.7	+1.3	+3.7	+7.9	+5.2
Women's and girls' clothing	+3.5	+2.4	+3.5	+6.0	+2.8
Footwear	+3.2	+2.8	+4.2	+6.1	+5.1

¹ Preliminary estimates—Average for 1st 9 mo of 1975 compared with average for 1st 9 mo of 1974.

² Also includes infants' wear, sewing materials, jewelry, and apparel upkeep services, for which separate indexes are not available.

Source: Bureau of Labor Statistics.

FAMILY EXPENDITURES: THE FARM FAMILY LIVING SURVEY

[By Fred C. Thorp, Estimates Division, Statistical Reporting Service, USDA]

1973 FARM FAMILY EXPENDITURE SURVEY

THE SURVEY

During 1973 and early 1974, The Statistical Reporting Service conducted a comprehensive survey to determine living expenditures for farm operators' families.

Survey data were collected by personal interviews. The initial interviews in April 1973 defined the consuming unit and its characteristics, obtained first-of-the-year inventories, and asked expenditure data for frequently purchased items for the first quarter of 1973. Second quarter expenditure data were collected in July. The final interview in February 1974 asked expenditures for the last half of 1973 for frequently purchased items, annual expenditures for items purchased infrequently, and information on income.

The national sample produced over 2,600 questionnaires completed for all three interviews. The sample design had two stages. The first consisted of 121 counties; every county had a chance of selection, however, those with more farms had a greater chance. The second stage was land area segments. All farm operators, regardless of the farm size, living inside the area segment were interviewed. This design produced a self-weighting sample.

EXPENDITURES IN 1973

The survey results indicate farm families in the United States spent an average of \$9,317 in 1973 or a total of \$27 billion. The family income from farm and nonfarm sources, before taxes, averaged \$12,371 and after taxes, \$10,965. Net farm income doubled going from \$14 billion in 1972 to \$18 billion in 1973, so expenditures may be somewhat atypical. However, the expenditure patterns follow earlier survey findings.

MAJOR EXPENDITURE GROUPINGS

Housing, food, and clothing, usually referred to as the basic categories, accounted for 57.4 percent of the total expenditures.

Housing, including shelter, household operations, furnishings, equipment, and utilities, took the largest amount, \$2,671 per family or 28.7 percent, of the total expenditure.

Food, excluding the value of products consumed on farms where grown, but including nonalcoholic beverages, meals eaten away from home, and food stamps, was second with 21.6 percent of the total or an average of \$2,021. Food stamps accounted for \$7.24 or about 0.1 percent of the average family expenditure. Clothing expenditures were a distant fourth in importance with 7.0 percent of the total or an average of \$648 per family.

Transportation constituted the third largest component of family spending. The purchase, operation, and maintenance of motor vehicles took 17.6 percent for an average of \$1,639. Almost one-half was for the purchase of motor vehicles.

Medical care cost each family an average of \$624 and accounted for 6.7 percent of total expenditures. Gifts and contributions made up 3.9 percent of the total, followed by personal insurance with 3.4 percent. About 2.3 percent of the family expenditure was for personal care. Recreation, reading, education, tobacco, alcoholic beverages, and other expenditures accounted for the remaining 8.7 percent. Of these items, education, with 1.7 percent or an average of \$160, was the largest, followed closely by recreation and reading with 1.5 percent or an average of \$140.

CHANGES IN SPENDING PATTERNS BETWEEN 1955 AND 1973

The last comparable expenditure survey conducted by the Department of Agriculture (USDA) was for 1955 and included 3,845 respondents. Rural farm family expenditure data are available for 1961 as a part of the Bureau of Labor Statistics (BLS) nationwide survey of consumer expenditures. However, these data are not directly comparable with the 1955 and 1973 surveys because of some differences in concepts and data collection procedures.

The Consuming Unit

The farm family averaged 3.5 persons in 1973, down from the 3.8 in 1955. The average age of farm operators (head of household) in the 1973 survey was 50.4 years, compared with 49.6 years in 1955.

Farm Family Expenditures 1973

Total expenditures for family living in 1973 were more than \$9,300. This is nearly triple the average expenditure of \$3,300 in 1955. When the change in price level is taken into account, real consumption was up about 70 percent.

In 1973, U.S. farm families were using a smaller proportion of their total expenditures on food, clothing, medical care, tobacco, and alcoholic beverages than in 1955. A greater proportion of the family expenditures was used for transportation, education, personal insurance, gifts, and contributions.

Housing and Food

Housing was the largest grouping for farm families in both 1955 and 1973 accounting for 28.1 percent of total expenditures in 1955 and 28.7 percent in 1973. Compared with 1955, a greater proportion of the 1973 housing dollar was used for shelter and less for furnishings and equipment and household operations. In 1973 about 47 percent of the housing dollar was for shelter compared to 38 percent in 1955.

Expenditures for food and beverages predictably decreased in importance from 25.2 to 21.7 percent. Traditionally, food responds less than other categories to increases in family income.

Transportation

The largest percentage increase between the two years occurred in automobile expenditures. These rose from 11.0 to 17.2 percent of total expenditures. Auto sales were a record high in 1973 and farm families were using a significant portion of their income for auto and truck purchases. Respondents were asked to report motor vehicle purchases for 1970 through 1973. The family share (excluding costs charged to the farm as production expenses) of all motor vehicle purchases averaged \$298 for 1970, \$433 for 1971, \$691 for 1972, and \$756 for 1973. Expressed as a percent of operator's realized net farm income, the purchases would represent 7, 12, 14, and 10 percent for those four years. This shows a substantial upgrading of transportation in 1971, 72, and 73.

Clothing and Other Expenditures

Clothing expenditures declined sharply as a proportion of total spending, from 13.0 to 7.0 percent. Also, tobacco and alcoholic beverages took a sharply smaller proportion of spending in 1973 than in 1955.

Expenditures for education and personal insurance were up substantially in 1973. About the same percentage of total expenditure was used for recreation and reading and personal care in 1973 as in 1955.

FURTHER ANALYSIS OF 1973 EXPENDITURES

Housing

Of each dollar spent for housing, about one-half was for shelter, one-fourth for furnishings and equipment, and one-fourth for the operation of the household. This breakdown is fairly consistent for all economic groups.

Food

About 82 cents of the food dollar expenditure went for food and nonalcoholic beverages used at home. Food consumed away from home accounted for roughly 18 cents. The percentage of the food dollar used for food away from home tended to decrease as income decreased.

The SRS consumer expenditure survey did not ask highly detailed questions on food purchases; nor were families asked to keep a diary. The questions asked for usual amounts spent per week or per month.

Transportation

The transportation dollar breaks down into an average of 46 cents for the purchase of motor vehicles, 40 cents for operating expenses, 12 cents for maintenance and repair, and 2 cents for other travel and transportation. Higher income families spent more of their dollar on the purchase of vehicles and less on operating expenses, the reverse being true for lower income families. Maintenance and repair took roughly 12 cents of the transportation dollar for all income classes.

Clothing

The share of the clothing dollar averaged 34 cents for purchases for females ages 16 and over; 10 cents for girls 2-15 years of age; 31 cents

for males 16 and over; 10 cents for boys 2–15 years of age; 2 cents for children under 2 years; and 13 cents for materials and services which were not identified with individual family members. This allocation of the clothing expenditure was generally true for all income classes.

Health Insurance

Health insurance premiums made up 38 cents of the dollar spent for medical care. The percent of the dollar decreased as income decreased, going from 42 down to 31 percent. However, this does not necessarily mean that the lower income families have less protection, since more of them have off farm jobs that include health benefits.

SPENDING PATTERNS RELATED TO FARM PRODUCT SALES

Farm Strata by Value of Sales

Survey data have been summarized by economic class of farms based on income from sales of agricultural products. Below are the sales classes and percent of farm families in each group.

<i>Farm product sales</i>	<i>Percent</i>
Stratum 1, \$40,000 or more-----	18.9
Stratum 2, \$20,000 to \$39,999-----	14.5
Stratum 3, \$5,000 to \$19,999-----	24.8
Stratum 4, \$1,000 to \$4,999-----	25.7
Stratum 5, less than \$1,000-----	16.1

Off-farm income

On average, off-farm income made up over one-half of the money income before taxes for all farm families. For Stratum 1 farms, it averaged about 25 percent of total income and climbed to over 90 percent for Strata 4 and 5. Money income before taxes was \$21,700 for Stratum 1 farms, then dropped to \$12,400 for Stratum 2. Stratum 3 farms averaged \$10,300, while for Stratum 4 it was \$9,500 and Stratum 5 was \$9,000.

Housing

The housing category was the largest expenditure for all strata of farms and accounted for 28 to 30 percent of the family budget. In this category, the average expenditure for shelter ranged from \$1,824 per year for Stratum 1 farms downward to \$941 for the Stratum 4. Family spending for furnishings and equipment ranged from \$1,117 for Stratum 1 to \$507 for Stratum 5. Household operation costs were between \$675–\$700 for Strata 3–5, \$757 for Stratum 2, and \$852 for Stratum 1.

Food

Food ranked second in overall importance, with expenditures taking a greater proportion of the total as the income levels dropped. Food accounted for 18.6 percent of the total for Stratum 1 farm families and 24.6 percent in Stratum 5. Actual expenditures ranged from \$2,526 for Stratum 1 farms to a low of \$1,776 for Stratum 4.

Transportation

Transportation made up about 16 percent of total expenditures for Stratum 1 and 2 farms, 17 percent for Stratum 3, and over 19 percent for Stratum 5. Expenditures for purchases of motor vehicles for

Stratum 1 farms averaged \$1,189, more than 11½ times the outlay for Stratum 2 farms. The expenditures for farms in Strata 3 through 5 were between \$600 and \$650. Strata 1 and 2 farms spent the most on vehicle maintenance and repair, at \$241 and \$205, respectively. The remaining groups spent an average of \$175 to \$180. Operating expenses averaged \$740 for the larger farms then dropped to \$615 to \$635 for Strata 2, 3, and 4 but went up to \$685 for Stratum 5. This probably reflects more driving to off-farm jobs.

Clothing

Clothing expenditures as a percent of total expenditures for family living ranged from 6.5 to 7.4 percent for various strata. The dollar expenditure for Stratum 1 was nearly \$1,000, then dropped to \$707 for the next stratum, and averaged \$602, \$493, and \$504 for the next three respective groups. This same pattern held for purchases of men's, women's, and children's clothes.

Medical Care

Medical care required 6 to 7 percent of the family budget. Annual expenditures followed income, amounting to \$885 for farms with the upper incomes to \$472 for farms with the least income.

Personal Care

Personal care also followed income, accounting for 2 to 2.5 percent of total family living expenditures. Tobacco and alcoholic beverages made up about 1 percent of the total expenditure for each strata. Recreation and reading, education, personal insurance, and cash gifts and contributions outlays all decreased as income decreased, both in terms of dollars and as a percent of total expenditures.

MOTOR VEHICLE EXPENDITURE

Distribution of Motor Vehicle Purchases in 1973

Of the farm family's share of the dollar spent on purchases of motor vehicles, about 45 cents was for new cars, 35 cents for used cars, 9 cents for new trucks, 3 cents for used trucks, and 9 cents for other motor vehicles. When farms are divided into farm income categories, the Stratum 1 operators spent 53 cents on new cars. The amount dropped with each successive stratum, with Stratum 5 families spending 36 cents of the dollar for purchase of motor vehicles or new autos. For used autos, Strata 2-4 farms spent 35-40 cents, while Strata 1 and 5 used 31 cents for used autos. New truck purchases accounted for around 4 cents for Strata 1 and 2 farms, then jumped to 12 cents for Strata 3 and 4, and increased further to nearly 18 cents for Stratum 5. Used truck purchases made up 2 to 4 cents of the motor vehicle dollar.

Distribution of Motor Vehicle Purchases 1970-72

Comparing the distribution of the dollar spent for motor vehicle purchases in 1973 with the three previous years shows a smaller proportion of the dollar went for new autos and other motor vehicles with more of the dollar being spent for used autos. This may be a result of purchasing a second family car. During 1970-72 the distribution of the purchases was nearly stable. New autos accounted for around 48 cents, used autos 29 cents, new trucks 9 cents, used trucks 3 cents, and other motor vehicles 11 cents.

PURCHASES OF APPLIANCES

Major Appliances

The survey obtained expenditures for most appliances for both 1972 and 1973. The average expenditure for major appliances was \$254 in 1973, almost identical with the 1972 level. In 1973, farm families spent more for color TV's, pianos and organs, sewing machines, home freezers, and clothes washers, while less for lawn and garden equipment, window air-conditioners, and clothes dryers than in 1972.

Minor Appliances

Expenditures for minor equipment items averaged \$124 in 1973, up 72 percent from 1972. For example, purchases of exercise and recreation equipment were up 87 percent, power and handtools up 62 percent, portable heating or cooling equipment up 52 percent, electrical personal care equipment up 49 percent, small electrical kitchen items up 45 percent, and photographic and sound equipment up 38 percent.

PERCENT OF FAMILIES REPORTING SELECTED EXPENDITURES

The survey data indicated that about 80 percent of the farm operator families owned the dwelling they occupied. This is based on 81 percent of the respondents reporting property taxes paid on owner occupied dwellings. Cash spent for living quarters was reported by 12 percent of the families. The remaining families had other arrangements for housing, such as house included with farmland rent, living with parents, or living in a rent-free dwelling.

Health Insurance Premiums

Health insurance premiums were paid by 72 percent of the families. By farm income groups, the percent reporting were 83, 79, 70, 71, and 60 for Strata 1 through 5 respectively. Hospital expenses were reported by about one-fourth of the families, with the percentage ranging from 22 for the lower income group to 27 percent for the upper income farms.

Automobiles

During 1973, nearly 30 percent of the families purchased one or more autos used for the family. Surprisingly, this was only slightly above 1972. The big increase of families purchasing autos occurred between 1971 and 1972, when the percent purchasing jumped from 18 to 29 percent.

House Furnishings

In the home furnishing line, 16 percent purchased bedroom furniture, 11 percent outdoor patio furniture, 11 percent color TV sets, 8 percent dining room furniture, 5 percent kitchen furniture, and 2 percent purchased pianos or organs. Clothes washers were the most frequently purchased major appliance with 10 percent of the families purchasing them in 1973. Percent of families purchasing other major appliances were: cook stoves 9 percent, refrigerators 9 percent, home freezers 7 percent, clothes dryers 6 percent, sewing machines 5 percent, and dishwashers 4 percent. Purchases of one or more small electrical kitchen appliances were made by 37 percent of the farm families.

Twenty percent purchased electrical personal care equipment. Photographic equipment purchases were made by 9 percent of the respondents and 7 percent reported buying stereo sets or components.

Source for Additional Data

Survey results of the 1973 farm family expenditure survey are published in a Statistical Reporting Service bulletin titled, "Farm-Operator Family Living Expenditures for 1973", Sp Sy 6 (9-75). Copies of this bulletin may be obtained from the SRS publications office in Room 0005 of the South Agriculture Building or by writing to: Crop Reporting Board, Statistical Reporting Service, USDA, Washington, D.C. 20250.

CURRENT SITUATION AND GENERAL ECONOMIC OUTLOOK FOR THE FAMILY

[By Helen F. McHugh, Dean, College of Home Economics,
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In analyzing the general economic situation of American families, it seems appropriate to give some thought to the characteristics of individuals and families. Therefore, before we launch into a lot of statistics associated with dollar signs, we shall review some population data. After due attention has been given to matters of the shorter run, some ideas for the longer run may be shared. Where possible, information to be shared with you is organized according to the four geographic regions of northeast, north central, south, and west. This will assist in our recognizing ways in which one area of the country may differ from another. Perhaps, with this understanding, different approaches appropriate to the situation will be forthcoming.

Mention will be made of the more significant findings among the data reviewed.¹ A set of appendix tables has been prepared in which more comprehensive data may be found. From these data, an attempt will be made to set out what appear to be the implications.

POPULATION CHARACTERISTICS

Age.—Two interesting phenomena with respect to age are noted from comparison of the 1970 census data with that of 1960: (1) the median age of the population is younger for the United States as a whole and for each of the four regions, and (2) an increasing percentage of the population is 65 years or older. The obvious result is that the segment of the population that comprises the so-called productive sector is a smaller part of the total. Therefore, it will require increased productivity from the working population to maintain per capita earnings. Median ages are the highest in the Northeast region and tend to be slightly higher in the nonmetropolitan counties throughout the country. A greater number (and percentage) of older Americans live in the nonmetropolitan areas of our country; this differential is even greater for nonwhites than for whites.

Sex distribution.—Among the population, too, the number of women exceeds that of men in all sections of the country except in the rural areas of the Western region. The metropolitan areas of the Northeast contain the greatest imbalance. The differential between men and women becomes more pronounced after 65 in all regions.

While the ratio of men to women is lowest for nonwhites of all ages, nonwhites age 65 or over are more evenly distributed between men and

¹ Data have been obtained from a variety of standard governmental sources and, therefore, references are noted only at the end of the paper.

women than are whites. The former may be attributable to the distribution of live births in combination with infant mortality; the latter reflects a possible sex difference in life expectancies among races.

Education.—The amount of education is becoming more uniform throughout the country. The median years of schooling for persons 25 years of age or older ranges from a low of 9.9 years for persons in the nonmetropolitan areas of the South to a high of 12.4 years for persons living in the West. Almost 6 percent of the nonwhite population have four or more years of college while more than twice that percentage (13.9) of all persons living in the metropolitan areas of the West do. Even though the percentage of persons in the nonmetropolitan counties having four or more years of college is small, the population of such counties in three regions have a median of 12 years of education.

Family types.—An assumption frequently made is that most persons live in a traditional nuclear family composed of mom, dad, and the children (the USDA usually defines those as a boy 13 and a girl 8). However, data show that a substantial number of persons have a different situation: 14 percent of the families are not husband/wife arrangements and almost 11 percent of the families in the United States have a female head. Not surprisingly, the percentages are lower for the nonmetropolitan counties than where the population is concentrated in cities. For the nonwhites, the so-called usual is even less common, with 31 percent of the families other than husband/wife teams and 26 percent with female head. This is better understood when the economic elements are considered.

Mobility.—If one compares the 1970 census data with that of 1960 and then decides to wait until 1980 to study the matter again, a few surprises might be in store. Interestingly, a significant turnaround has occurred in the rate of population change in the nonmetropolitan counties of the United States. What had formerly been an outmigration from the rural areas has now become a population increase; the rate of increase between 1970 and 1973 in the nonmetropolitan counties has exceeded that of the metropolitan counties. While the greatest growth occurred in those nonmetropolitan counties adjacent to Standard Metropolitan Statistical Areas, the growth rate in nonadjacent counties also exceeded that of the metropolitan areas. Several changes in industrial and resource development are felt to contribute to these shifts, not the least of which is the trend toward decentralization of manufacturing.

Consistent with these population trends are the data with respect to the frequency of moves. Within the five years prior to the 1970 census, the percentage of families changing place of residence declined for all regions of the country over the period prior to the 1960's. Approximately 52 percent of the families were living in the same residence in 1970 that they were living in five years previously. The degrees of mobility vary by regions with only a third of the families in the Northeast moving within the five years preceding 1970 while almost half of the families in the West moved during that same time period. The nonwhites move a little less frequently than do whites, and whether it is a rural or metropolitan area seems to make little difference.

Household formation.—Just as populations have varying densities throughout the United States, the rate of household formation differs from region to region. For the decade from 1960 to 1970, the Southern region experienced an average annual percentage increase in the number of households greater than the average annual rate of change for the decade than for the preceding one. Even though the total percentage change in the West was the highest for the decade, the *rate* of change was still less than that in the South.

In short, it can be said that the working population must support increasing percentages of young and old, that a greater number of women than men will be found in most population segments, that as many have had more than 12 years of education as have had less, that one out of ten families is headed by a woman and about one out of seven are nonnuclear in character. The numbers of people living in nonmetropolitan areas are increasing and while the population is highly mobile, moves are occurring at a decreasing rate. The South leads other regions in the rate at which new households are being formed.

CURRENT SITUATION

The economic status of individuals and families may be reflected in a few basic indicators. Besides the levels of employment, other indicators of business activity with income and spending levels will be the focus.

Employment.—The number of employed persons has increased in the past year, yet it is noteworthy that the larger number represents only one-tenth of 1 percent more of the population now in the workforce. The impact of unemployment falls with uneven force on different classes of the population. Rates of unemployment among women 20 years and older are greater than for male counterparts in all categories, yet young people have borne the heaviest burden of all. While almost 13 percent of 16- to 19-year-olds were unemployed last year, that percentage now stands at nearly 18. For nonwhites, it is over 31 percent while almost 40 percent of male nonwhites do not have jobs.

Remember, too, that unemployment data do not take into account those who have become so discouraged that they no longer are actively seeking work. The sheer trauma of repeated disappointments makes this understandable.

Unemployment insurance has reduced the magnitude of income disruptions for many workers, but such insurance is far from universal or fully offsetting of lost earnings. In 1974, over 50 percent of those unemployed did not receive insured benefits. While the numbers of unemployed increased markedly in 1975, so too did the number of insured. The absolute difference between the numbers unemployed and numbers receiving unemployment benefits increased by one-tenth of a million. This represented a smaller percentage of those unemployed (about one-third). Of further significance is the substantial increase in the number of initial claimants simultaneous with a doubling of the number who have exhausted their benefits. The size of the average benefit further influences the situation. Average weekly benefits during the last twelve months of record ranged from \$62.50 to \$69 while the average weekly earnings for those employed ranged from \$157 to \$165.

If employment data are classified by occupational categories, the lowest rates of unemployment are found among the manager/administrator class while the highest percentage is among construction workers. These relationships prevailed in both 1974 and 1975.

Industrial and business activity.—Industrial production of all sorts dropped sharply in the final quarter of 1974. The decline continued for the most part through the second quarter of 1975. Preliminary data have been released for subsequent months which indicate a reversal back to an upward trend; yet, leading indicators announced in late October show that September activity was off in several areas. The statistical practice is that similar directional movement for three months in succession is necessary before such is labeled a trend.

Simultaneous with the downtrend in production was the decline in sales activity coupled with a working off of inventories in both the retail and wholesale sectors. The unavoidable impact of such directional shifts in two major areas of activity was the reduction in employment.

Data available at this time a year ago showed little if any of these directional shifts. Numerical data and graphs through the second quarter of 1974 (actually, in most areas, through the third quarter, too) showed business and industrial activities continuing to increase or at least holding constant. About the only signal of an impending downturn was the mood of the people.

Income.—Income figures come in several varieties with the most common ones being per capita and for the family. Early in the discussion of employment, average weekly earnings were mentioned. Technically, those data pertain to private industrial workers outside of agriculture. No one figure can accurately portray the situation for all individuals and families. However, a useful translation is to an earlier base. Since the Consumer Price Index was revised in 1967, that is a logical base point. Effecting such a translation for the average weekly earnings, it is learned that in July 1975 the average wage earner in America received the equivalent of \$115.74 1967 dollars, whereas his earnings a year earlier would have measured \$119.16 1967 dollars—a slight drop in the wage earner's purchasing power.

Per capita disposable income for the second quarter of 1975 was \$5,055, up \$490 from the preceding year. In 1958 dollars, the equivalents would be \$2,907 and \$2,850 respectively, meaning that if all the personal income were evenly distributed among the population of the United States, each person would have had \$57 more real purchasing power this year than last in 1958 terms.

Incomes, however, are not evenly spread as is clearly shown by the 1969 median family incomes for the four regions. Median family incomes in the South were approximately \$1,500 below the national figure, while in the other regions the medians were up to \$800 above. Nonwhite families experienced still greater variances with the median for that group \$6,308, almost \$3,200 below the figure for the United States as a whole.

Another important consideration is the number of families whose income is substandard. Using \$6,000 as the breakpoint and making no allowance for family size, it was found that in 1969 over one-fourth (26%) of the families in the United States would be classed as substandard incomewise. Thirty-five percent of the families in the South

have incomes of \$6,000 or less, while only a fifth of the families in the Northeast had such limited resources. Almost fifty percent of the nonwhite population have incomes in the \$6,000 or less category, and the percentage increases to nearly seventy for nonwhite families in rural counties.

Expenditures.—The level of income takes on new importance when one weighs the prices of the goods and services available in the market. Despite the high levels of unemployment and the irregular earnings in some occupations, the levels of personal consumption have risen. Personal expenditures by the end of the second quarter of this year were at an annual rate \$70 billion higher than a year earlier. This increased rate was almost equally divided between the purchase of non-durables and services. The dollar purchases for durables remained, in essence, unchanged.

At first glance, these figures appear to be at variance with changes in the Consumer Price Index since the sector experiencing the greatest increase was housing which to most people's minds is a durable. However, since the index for housing includes household operation and utilities, one might assume that this segment of housing was most affected by price increases. Interestingly, the South has the highest overall index of any region. Likewise, the South experienced the greatest price increases during the past twelve months. The West experienced the next greatest changes in price levels. Housing prices showed the greatest increases in three of the four regions while prices for clothing increased the least of any category in each region. Clothing prices increased only a third to half as much as prices in other categories.

The recently released report of the 1973 survey of Farm-Operator Family Living Expenditures provides more specialized information for rural families. Data from that study reflect the changing allocations among expenditure categories. One of the more notable changes was an almost 50 percent reduction in the percentage spent for clothing (from 13.0 to 7.0 percent between 1955 and 1973). A percentage increase of similar magnitude for transportation shifted that expenditure category to the third largest for the average farm family.

While the higher prices for vehicles would explain part of the percentage increase, some may be attributable to upgrading types of vehicles or through the addition of more units per family. The higher allocations for maintenance and operating costs were recorded prior to any impact from the 1973 oil embargo. Therefore, the amount of travel may have changed from the previous survey period (1955), or perhaps farmers have a few gas-guzzlers, too.

Percentages were calculated for the various expenditure categories for the different classes of farms in an effort to determine any significant variation. The percentages spent for food by the farm families in the different economic classes are consistent with Engel's Law in that the families with higher incomes spent more dollars for food but a lesser percentage than the lower income families. Food was the only *major* expenditure category where expenditures varied much among the farm classes.

Shelter was a relatively constant share among the income classes, with the least variation in dollar amounts spent by families for household operations. Relatively small numbers of families had purchased

major appliances during the survey period. If one could assume that 1973 was a representative year, the percentage reporting may reflect somewhat on the life of such appliances. (This is consistent with data reported in the Summer 1975 issue of *Family Economics Review*.)

Expenditures for clothing are puzzling from the standpoint of the dollar allocations among the different age groups. The modest dollar outlays for the younger family members may reflect the ability of the household members to adapt items for younger members of the families. Another related element may be the source of over 50 percent of the family's income. Since so much is earned off the farm, clothing expenditures for older family members may relate directly to the generation of that income. Another factor may be that because of the rapid growth among children below sixteen years, lower priced garments are purchased. That seems to me the weakest explanation since no ready-made garments are inexpensive nowadays.

In comparing the expenditures for all farms between the two survey periods, it is noted that outlays for medical care declined about .6 percent while the costs for personal insurance increased by a bit more. Is it possible that personal insurance now covers a greater share of the medical costs so that, in essence, only a shift among categories has occurred? The percentage outlays for the different farm classes suggest this even more strongly in that the relationship between the two categories appears to be inverse.

Expenditures for education appear to have a positive correlation with income levels. The nature of the increased expenditure may reflect differences in the sources of education.

GENERAL ECONOMIC OUTLOOK

You have heard about all that can be said about what *is*; now comes the tough part of trying to suggest what *may be*. To minimize the troubles, only broad areas will be addressed: employment levels, income prospects, potential price changes as reflected in spending, and consumer attitudes.

Employment levels.—Unemployment poses as a persistent problem that may have only gradual improvement. Large numbers of those without jobs at this time last year are still unemployed. For many, the condition of unemployment appears to feed upon itself and to almost defy remedy. This state of affairs is particularly grim for that group of young people who have been unable to obtain any work experience. When recovery begins and jobs become available, the well-known tendency of the employer is to choose those with experience. The emotional impact for some may be more difficult to handle than the monetary. It is possible that "retraining" may have to occur for some before they have ever utilized their previous skills.

It must be recognized, too, that new jobs will not necessarily become available where the potential workers are located. This can add both expense and trauma and sometimes the costs are seen as greater than the benefit of being employed. The magnitude of the unemployment benefits in a few instances defer job acceptance. Many of the jobs vacated in the last several months have disappeared and will not be revived. As job prospects brighten, some who currently are not searching will again become a part of the statistics.

One of the biggest culprits to a resurgence of business activity at the moment is uncertainty: What are the oil producers going to charge? How efficient and safe will the new cars be? How long will the search for new energy resources be top priority? Will government truly institute efficiencies? All of these questions come to bear directly or indirectly on prices and the fear of refueling inflation weighs heavily in many decisions that affect the number of jobs. It appears that businessmen at last recognize that some goods and services may be price-elastic. Consumer confidence appears to be on the way back but, at the moment, is not sufficiently visible to those making the decisions about cranking up the machinery of production. Some of the administration proposals for fiscal restraint would likely protract the unemployment problem.

Income prospects.—Income changes during the past twelve months were relatively modest. While average earnings improved slightly overall, for some it was a time of regression. States heavily dependent upon agriculture fared less well; the high levels of unemployment moderated the demands of several unions in contract negotiations. It is doubtful that the same degree of temperance will prevail for another round of negotiations.

Signs are that 1976 and beyond will see increased earning levels on the average. Important to this prediction is the fact that some 66 million income recipients (not all employed) receive automatic adjustments in income with increases in the cost of living. The pervasiveness of such adjustments has implications for future income levels that are not clear to me. Such an approach to income changes (costs of production when interpreted from another vantage point) is an added force in the cost-price spiral. Current prices, at least in some instances, neither reflect the representative costs of production nor the worth of the goods to the potential consumer. Furthermore, many items included in the so-called cost-of-living index can hardly be considered essential to one's survival. The arguments for adjusting salaries and wages according to changes in some partially related apparatus are no more logical than a faculty member or executive asking for a salary adjustment because he wants to send his children to a private school. Yet, this approach already is deeply engrained in our economy.

The point of this digression is that income changes cannot be totally separated from the price structure.

Price changes and spending.—Many questions have been asked in recent weeks about the probable magnitude of price changes in the offing. Unfortunately, very few answers have been forthcoming. A most important element to future price changes is, of course, the price of oil. So many of our products are petroleum-based that changes in the price of gasoline at the pump is almost insignificant except that such changes reflect the magnitude of accompanying changes that will occur in other segments of the economy. In short, an increase in the price of crude oil will have a manifold effect on the overall commodity price level.

Any number of stories could be related about families who greatly reduced their fuel consumption only to have the total fuel costs increase. A contributor to the drastic change in utility prices is the automatic fuel adjustment which allows utility companies to pass on to the consumer the increased cost for fuels to furnish the power.

The hazard of this automatic arrangement is the removal of any incentive for the producer to negotiate for cost savings in this major factor of production category. Since negotiations require time which has its own costs, the utility company finds it easier to pass the buck on. This reflects the absence of competitive forces with the usual result of higher consumer prices.

Food and fuel prices will hold the key for consumers. Much has been written about the increasing prices for food; yet, one seldom sees mention of the fact that only a small, small portion of the increase represents increases in the prices paid to farmers for the raw commodities. Decisions about the control of prices of both natural gas and domestic oil will influence the magnitude of price changes for a broad range of products in addition to gasoline and heating fuels. If prices are decontrolled, double digit inflation is assured. The most recent available data show a .5 point decline in the wholesale price index for farm products while processed foods and feeds increased nearly two index points. The largest increase in any category comprising the index was for fuels and related products which advanced almost six points (about 2%).

Earlier discussions referred to regional issues and one of growing concern is the fact that the South which has the lowest average income is now confronted with the highest index of prices. The economic challenges for individuals and families in that region will be especially acute. However, no region will find it easy to keep income and expenditures in balance.

Perhaps the most positive indicator found among all the statistics reviewed is that the level of saving as a percentage of disposable income increased to 10.5 by the end of the second quarter of 1975 from 7.4 percent just twelve months earlier.

Consumer attitudes.—Earlier, it was alluded to here that the attitudes of consumers can affect the level of economic activity. With this as its thesis, the *New York Times* undertook in September a survey of how consumers see their current situation and what they expect for the future. In the main, attitudes expressed remained positive but more modest than previously. The highest level of optimism was among young nonwhites, especially those well educated. Young women and professionals generally see the future as still better than the present. The older people, especially those who have had irregular work experience, drew negative conclusions about the future. While the American dream seems a bit tarnished for some, it remains bright for others.

Other reports of increasing confidence have appeared from time to time. No doubt, some positive value can result from this optimism.

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TABLE 1.—SELECTED DATA RELATED TO ECONOMIC SITUATION OF FAMILIES

	August 1974	August 197
Employment:		
Employed:		
Number of persons (millions).....	94.7	96.5
Percent of population.....	62.6	62.7
Unemployed:		
Number of persons (millions).....	4.9	7.7
Percentage (seasonally adjusted) among classes:		
Overall.....	5.4	8.4
Males:		
Overall.....	14.8	7.9
20 yrs and over.....	3.5	6.1
Whites.....	3.2	5.6
Nonwhites.....	6.2	10.8
Females:		
Overall.....	16.7	9.1
20 yrs and over.....	5.8	8.4
Whites.....	5.4	7.7
Nonwhites.....	8.2	12.5
Both sexes 16 to 19-yr olds:		
Overall.....	12.8	17.8
Nonwhites.....	26.1	31.3
Males.....		39.3
Females.....		31.3
Occupational category:		
Lowest percentage, management.....	1.8	2.7
Highest percentage, construction.....	11.7	21.2
Income:		
Average weekly earnings:		
Current dollars.....	\$156.56	\$164.62
1967 dollars.....	\$119.16	\$115.74
Per capita disposable income ²	\$4,565.00	\$5,055.00
Expenditures ² (billions):		
Personal consumption.....	\$869.1	\$938.6
Durables.....	129.5	130.6
Nondurables.....	357.8	410.1
Services.....	363.8	397.9
Savings (percentage of disposable income) ²	7.4	10.6
Unemployment benefits: ²		
Insured recipients (millions).....	2.2	4.9
Total benefit all programs (millions).....	\$541.6	\$1.2
Average weekly benefits.....	\$62.50	\$68.97
Average number initial claims.....	269,000	426,000
Average number exhaustions.....	41,000	89,000

¹ End-of-year data.

² 2d quarter data.

TABLE 2.—COMPARISON OF LIVING EXPENDITURES OF FARM FAMILY BY CATEGORY, 1955 AND 1973

	1973	1955	Difference
Food.....	21.7	25.2	-3.5
At home.....	17.6	21.7	-4.1
Out.....	4.0	3.5	+.5
Food stamps.....	.1	NA	
Housing.....	28.7	28.1	+.6
Shelter.....	13.4	10.7	+2.7
Furniture and equipment.....	7.5	8.9	-1.4
Operations.....	7.8	8.5	-.7
Clothing: All age-groups less.....	7.0	13.0	-6.0
Transportation.....	17.6	11.4	+6.2
Purchases.....	8.1	5.1	+3.0
Maintenance and repair.....	2.1	5.9	+3.2
Operation.....	7.0		
Other transportation.....	.4	.4	
Medical care.....	6.7	7.3	-.6
Personal insurance.....	3.4	2.6	+.8
Education.....	1.7	.8	+.9

TABLE 3.—AVERAGE EXPENDITURES PER FAMILY FOR CATEGORIES AND BY ECONOMIC CLASS, UNITED STATES, 1973—TRANSLATED PERCENT

Expenditures	All families	\$40,000> 1	\$20,000> 2	\$5,000> 3 and 4	\$1,000> 5 and 6	<\$1,000 7 and 8
Total.....	9,317	13,566	10,318	8,407	7,522	7,782
Percent.....	100.0	100.0	100.0	100.0	100.0	100.0
Percentage of total expenditures:						
Food.....	21.7	18.6	20.5	22.6	23.6	24.6
Housing.....	28.7	28.0	30.2	28.3	28.7	29.5
Clothing.....	7.0	7.3	6.9	7.2	6.6	6.5
Transportation.....	17.6	16.4	15.8	17.3	19.8	19.3
Medical.....	6.7	6.5	7.2	7.1	6.5	6.1
Personal.....	2.3	1.9	2.7	2.5	2.5	2.5
Tobacco and alcohol.....	1.0	1.0	1.0	1.0	.9	1.0
Reading.....	1.5	1.7	1.6	1.5	1.3	1.2
Education.....	1.7	2.2	2.4	1.4	1.3	1.0
Miscellaneous.....	4.6	6.0	5.5	4.0	3.2	3.4
Personal insurance.....	3.4	5.3	3.6	3.3	2.1	1.9
Gifts and contributions.....	3.9	5.1	3.4	3.8	3.4	3.2

IMPACT OF INFLATION ON FAMILIES

[By Nancy S. Barrett* and Anita Driscoll,* Congressional Budget Office, Fiscal Policy Division]

Inflation is a very general term that refers to an increase in some weighted average of the prices of goods and services produced or consumed in an economy. To arrive at a measure of inflation that has economy-wide significance, individual price changes must be weighted according to the importance of the commodities and services in the economy: food price changes, for instance, have a larger weight than, say, price changes for pianos.

There are, however, various measures of inflation, the most commonly cited ones being the Consumer Price Index, the Wholesale Price Index and the GNP deflator. Each of these price indices encompasses a different mix of goods and services and applies different weights to price changes. Changes in wholesale prices of farm products, processed foods and feeds, for instance, are weighted more heavily in the Wholesale Price Index than are changes in retail food prices in the Consumer Price Index. A rise in import prices due to a currency devaluation will affect the Consumer Price Index and Wholesale Price Index directly, but will only affect the GNP deflator indirectly to the extent that higher import prices feed back into the prices of goods and services produced domestically. The Wholesale Price Index is based in part on manufacturers' wholesale list prices and so, unlike the Consumer Price Index that is based primarily on transactions prices paid at the retail level, does not fully account for the common practice of discounting by some manufacturers.

Moreover, it is impossible to gauge the actual increase in living costs for any particular family on the basis of any readily available price index, since the composition of purchases for any particular family will not be identical to the weights assumed in constructing statistical price indices. The consumption pattern used to construct the Consumer Price Index, for instance, is based on a 1960-61 expenditure survey (revised in 1964) of urban wage earners and clerical workers. Its applicability to broader segments of the population (or later time periods) is certainly questionable. For instance, when food prices rise, families that allot a greater proportion of their budget to food than the families surveyed will experience a greater increase in living costs than is shown by the Consumer Price Index.

Not only are there various ways to measure inflation, but there are many different channels through which the inflationary process is transmitted. Differences in the underlying causes of inflation, even

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more than measurement problems, can affect the way inflation impacts on the family.

This paper will focus on the relationship between the inflationary process and household income. Two questions will be examined: First, how does inflation affect the real spending power of the household sector taken as a whole? This is an important consideration for assessing the impact of inflation on the aggregate demand for goods and services, economic growth, and unemployment. The second problem is the impact of inflation on the size distribution of income within the household sector. Does inflation intensify or mitigate inequality?

To the extent that inflation is associated with a strengthening or weakening of real demand, public policy can offset these effects through contractionary or expansionary fiscal measures. Economic policy can also attempt to offset the distributional consequences of inflation (if these are deemed undesirable) by appropriate tax measures. The paper concludes with a discussion of some of these policy options.

WHAT CAUSES INFLATION?

Inflation is never a matter of uniform, across-the-board price increases for all goods and services. Instead, some prices rise, some fall, and inflation occurs when the net effect of price increases is greater than declines. In an economy with some elements of monopolistic or oligopolistic price setting in product and factor markets¹ prices are not very flexible in the downward direction and hence, an increase in the prices of several important goods and services generally result in an increase in the average price level.

Because inflation, a rise in the *average* price level, is almost always induced by a change in *relative* prices, inflation is bound to be accompanied by a redistribution of income. Owners or suppliers of goods and services whose prices have increased gain, at least initially. One reason that inflation is such a complicated dynamic process is that this redistribution sets off attempts by the initial "losers" to recoup real income and wealth. Thus, an initial increase in a few prices ripples through the economy as wages are adjusted for "cost-of-living" increases and these wage increases in turn are passed through by firms into higher prices for the products they sell—with an extra profit bonus tacked on to regain "real" profit rates.

But not withstanding the fact that an inflationary process affects wages and prices throughout the economy, if the initial shift in relative prices is due to real changes in supply and demand in particular markets, there will be a shift in real income associated with the inflation.

Consider the case of an inflation triggered by an excessive demand for labor. This type of inflation occurred in the late 1960s in the economic expansion associated with the Vietnam buildup. Although prices increased throughout the economy, labor in short supply relative to some other resources. Over the longer run, firms could substitute capital and other materials for labor. But in the short run, not much substitution took place, and real wages—particularly in the industry

¹ Factor markets include markets for labor, capital and materials.

and service sectors—rose relative to real GNP. This meant a real increase in the spending power of the household *sector*.

From a macroeconomic point of view, inflation caused by an excess demand for labor has an expansionary effect on the economy. The process feeds on itself since increased household purchasing power and spending increases the demand for goods and services, and hence the demand for labor, still further. Thus, an appropriate policy response would be a restrictive fiscal policy to offset increased household spending. (This can be done either by increasing taxes, offsetting the impact of inflation on household's disposable income; or by cutting back on government spending to offset the effect of increased household spending on aggregate demand).

A 1970 study by two University of Wisconsin economists, Hollister and Palmer,² investigated the distributional consequences of a wage inflation within the household sector. They concluded that the poor may benefit from wage inflation as much as other wage earners since improved employment opportunities are available and transfer payments tend to rise faster than prices in these periods. Further, erosion of wealth due to inflation (that offsets income gains) affects the rich more than the poor, so that inflation tends to equalize wealth.

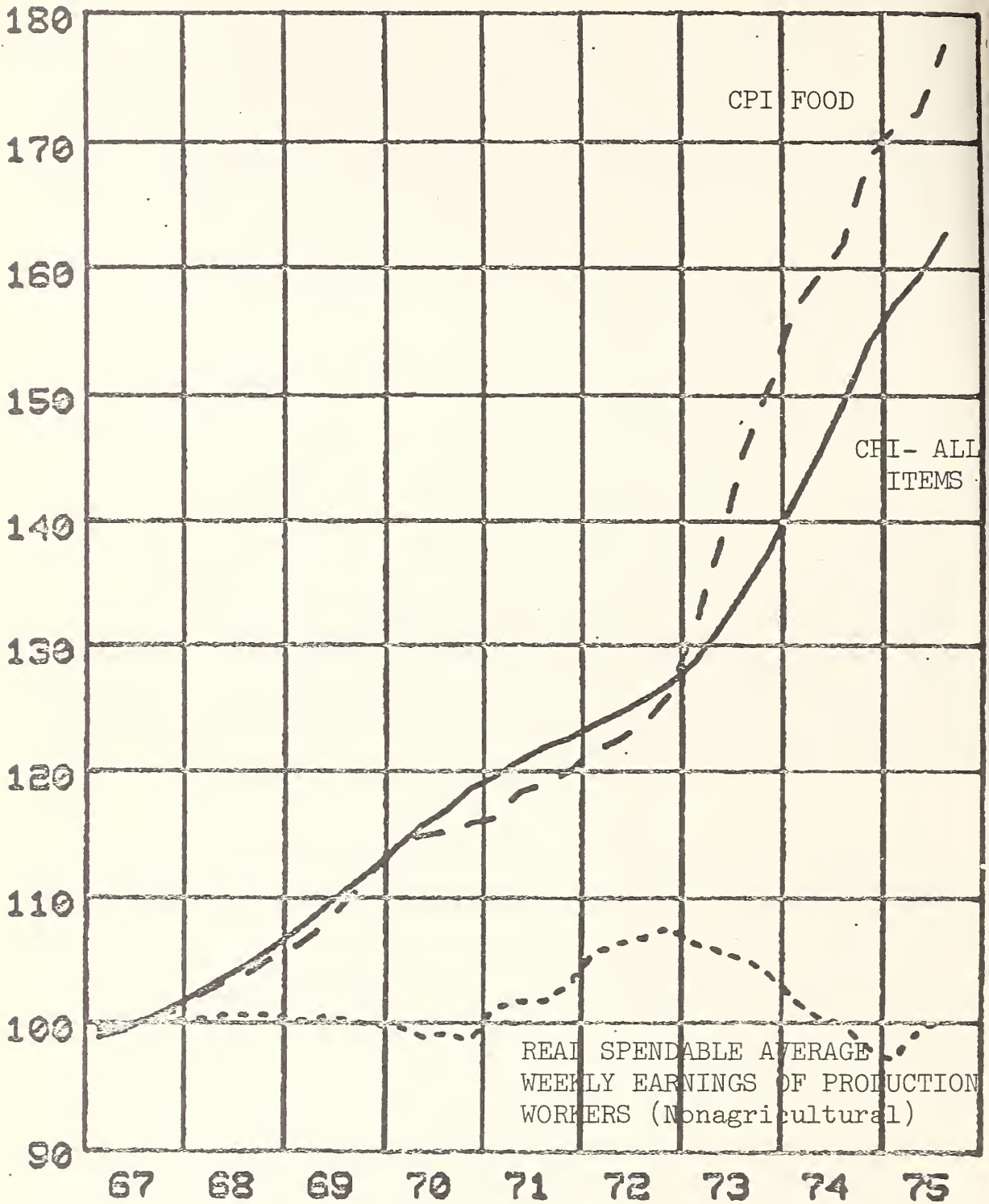
To the extent that an excess-demand inflation redistributes income to wage earners and the poor and redistributes wealth, this type of inflation could potentially reduce inequality. However, the distributional impact may vary with the skill level of wage earners, with some highly skilled workers gaining most, so that the overall distributional consequences are very uncertain.

COMMODITY INFLATION

More recently a different type of inflationary process has emerged with totally opposite consequences both for overall household spending power and for the distribution of incomes within the household sector. Inflation, beginning in 1972 was triggered primarily by relative increases in food and energy prices. From January 1973 to July 1975, food prices rose some 37 percent as shown in Figure 1, while the non-food component of the Consumer Price Index rose 23.6 percent. Hourly compensation increased 20.1 percent over the period while real spendable weekly earnings outside agriculture declined 5.6 percent. Further, the price of petroleum increased over 400 percent, with other energy prices also increasing. The ripple effects of these developments were not inconsequential as wage earners and business managers attempted to recoup their declining real incomes through higher wages and profits. But a highly restrictive fiscal and monetary policy that reinforced the erosion of real spending power in the private sector resulted in a severe recession that greatly restricted the ability of workers to maintain their real earnings and firms to increase prices in order to restore their profits.

² Robinson G. Hollister and John L. Palmer, "The Impact of Inflation on the Poor" in *Redistribution to the Rich and Poor: The Grants Economics of Income Redistribution*, Boulding and Pfaff (eds.), Wadsworth, Belmont, Calif., 1972.

FIGURE 1.—The effect of inflation on spendable earnings: 1967–75



Source: U.S. Department of Labor, Bureau of Labor Statistics.

From a macroeconomic perspective, higher food and energy prices have a *deflationary* effect on economic activity since they reduce the real spending power of the household sector, producing a real cutback in the demand for goods and services. The costs of higher food prices for American households since 1973 are estimated to be in the range of \$55 billion. Higher energy prices (before the latest OPEC increase)

added \$40 billion to the fuel bills of Americans. Weighed against a GNP of around \$1300 billion in 1973, this represents a sizeable deflation in real purchasing power for the economy as a whole.³

Coupled with this overall reduction in spending power are several major income transfers. Higher food prices, for instance, transfer incomes from non-farm to farm households. But these transfers are not offsetting since farm families must also pay higher prices for the food they eat. Further, farm households typically spend a smaller percentage of their incomes than urban households, so that overall spending in the economy would fall even if the transfers were offsetting.

Higher petroleum prices transfer income both to OPEC nations abroad and to domestic oil companies. In the first case, there is a net drain in purchasing power. In the second case, whether an increase in oil company profits deflates overall spending depends in large measure on the uses to which the proceeds are put. The initial impact of higher oil prices since 1973 has been a sizeable reduction in household's purchasing power. It is unlikely that the spending propensities of the oil companies out of their profits is as high as those of families from their incomes.

Together with the restrictive monetary and fiscal policies pursued by government, the deflationary consequence of higher food and energy prices was the most severe recession in postwar history, with unemployment reaching 9 percent and industrial capacity utilization falling to 63 percent. Although the recession was not a necessary by-product of this inflation (the reduction in real household spending power could have been offset by expansionary fiscal and monetary policies) higher unemployment should certainly be taken into account when assessing the burden of inflation on households as well as evaluating the distributional consequences of recent inflation within the household sector.

WHO BEARS THE BURDEN OF INFLATION?

Several factors should be considered when assessing the distributional impact within the household sector of an inflation generated by higher food and energy prices.

1. The poor spend a larger proportion of their incomes on food, gasoline and home heating fuels than do high income families and hence have experienced greater increases in their living costs for these items.⁴

2. The unskilled, disadvantaged worker is more likely to become unemployed in a recession than skilled, high-income workers.

3. Some categories of workers are better able than others to obtain cost-of-living adjustments in their incomes.

4. As farm prices rise, the gains go primarily to high income farmers, with low income farmers experiencing little improvement in their real incomes.

³ A simple way to calculate the effect of higher food prices on the household sector is to observe that food represents about 25 percent of the average household budget. Thus, a 10 percent rise in food prices reduces consumer real incomes by 2.5 percent.

⁴ Higher energy costs result in higher prices throughout the economy. The higher food prices thus generated fall more heavily on the poor yet the overall effect on the family budget is indeterminate except for the specific cases of gasoline and home heating fuels.

5. Asset holders experience erosions of their wealth in an inflation while debtors' real obligations fall.

The first four of these factors suggest that higher food and fuel prices produce an inflationary environment that exacerbates inequality within the household sector, with the burden falling disproportionately on the poor. However, the wealth effects work in the other direction. In the present circumstances it is likely that the regressive income effects far outweigh the wealth effects.

Figure 1 shows the changes in the Consumer Price Index from January 1973 to July 1975 for all items as well as for food. As is quite obvious in looking at the figure, food prices have risen more rapidly than other prices over the period. Yet, changes in the CPI do not show how the burden of these price increases is distributed among families at various income levels.

TABLE 1.—FOOD EXPENDITURE AS A FRACTION OF INCOME BY INCOME DECILE FOR 1972 AND 1974

[In percent]

Income decile	Total food/income	
	1972	1974
Lowest.....	40.1	46.6
2d.....	31.1	32.7
3d.....	25.1	28.0
4th.....	21.2	22.4
5th.....	19.1	20.8
6th.....	17.5	18.9
7th.....	15.8	17.6
8th.....	14.0	14.9
9th.....	13.1	14.3
Highest.....	10.8	11.4
Average.....	20.7	22.8

Source: Draft chapter, vol. 4, "Five Thousand Families: Patterns of Economic Progress," Institute for Social Research, University of Michigan, 1975.

Table 1 provides estimates of the proportion of an average household's total budget spent for food for different income levels. Food expenditure as a fraction of income by income decile is shown for 1972 and 1974. What can be seen in the table is that the lowest income group spends over 40 percent of its income on food while the highest income group spends about 10 percent on food. With food prices rising 37 percent from January 1973 to July 1975, it can be seen that this burden falls more heavily on the poor. For example, if the poor spend two-fifths of their budget on food and food prices rise 37 percent combined with a 24 percent rise in all other items the weighted impact on the poor become $(2/5 \times 37) + (3/5 \times 24)$ or 29 percent. In contrast, the affluent spend one-tenth of their budget on food. The weighted impact of the price rises on the affluent becomes 25 percent. The poor are also at a major disadvantage in that their consumption is limited to begin with so that a shift to less costly items is not always possible. This is due in part to the disappearance from the market of many simple, less expensive foods.

A similar analysis can be done for gasoline expenditures by income group as this is another component of the budget that has shown dramatic price increases. The poor, as an income group, spent some 5 percent of their average weekly income on gasoline during the period July 1972 to June 1973. The wealthy (average income of \$17,749)

spent under 3 percent of their weekly income on gasoline during the same period. As gasoline prices have increased some 36 percent since that time (and will increase yet more in the case of old oil decontrol) it becomes obvious that these expenditures are falling heavily on the poor. In addition, low income households spend an average of more than 11 percent of their income on natural gas and electricity, as compared to less than 2 percent for households with annual incomes over \$16,000.

Thus, on a pre-transfer basis an increase in food, gasoline and home heating fuel, prices affect the poor proportionately more than other groups in society. Yet, recession cannot be viewed as a trade-off to ease the burden on this group because it is the poor—i.e., the unskilled, disadvantaged worker,—that is more likely to be unemployed in a recession. Table 2 shows the unemployment rates by demographic and industrial groups during the 1974–75 recession. By race, blacks are hurt more by the increase in unemployment.⁵ Blacks also fall more heavily into the category classified as poor. By sex and age, women and teenagers experienced greater increases in their unemployment rates also. By occupation, blue-collar workers, particularly operatives and non-farm laborers suffer the most unemployment. These are the unskilled workers who fall heavily into the category of “poor”. By industry, the burden of unemployment fell heaviest on construction and manufacturing, areas that are heavily unionized but where non-union jobs are low paying and insecure.

Thus, the poor receive a disproportionate share of the burden of both commodity inflation and unemployment. Further, many poor families are less able than others in the population to obtain cost-of-living adjustments in their incomes, i.e., escalator clauses in collective bargaining contracts and in transfer payments.

TABLE 2.—UNEMPLOYMENT RATES BY SELECTED DEMOGRAPHIC AND INDUSTRIAL GROUPS DURING THE 1974-75 RECESSION

Group	May 1974	March 1975	May, June, and July 1975
All civilian workers	5.2	8.0	8.7
Race:			
White	4.7	8.0	8.1
Black, and other nonwhite	9.3	14.2	13.8
Age, sex:			
Males, 20 years and over	3.4	6.8	7.1
Females, 20 years and over	5.1	8.5	8.2
Both sexes, 16 to 19 years	15.6	20.6	20.0
Occupation:			
White-collar workers	3.2	4.6	5.0
Professional and technical	2.2	2.9	3.5
Managers and administrators, except farm	1.9	2.7	3.1
Blue-collar workers	5.8	12.5	12.6
Craft and kindred workers	3.8	8.7	9.4
Operatives	6.4	14.1	13.8
Nonfarm laborers	8.9	16.2	16.5
Service workers	6.7	8.5	8.5
Farm workers	2.7	4.5	3.2
Industry:			
Nonagricultural private wage and salary workers	5.2	9.3	9.6
Construction	9.6	18.1	21.2
Manufacturing	4.7	11.4	11.8
Durable goods	4.4	11.3	12.4
Nondurable goods	5.2	11.6	10.9
Service and finance	4.3	6.7	6.7
Government workers	3.4	3.9	4.4

⁵ As measured by the absolute increase in their unemployment rate.

TABLE 2.—UNEMPLOYMENT RATES BY SELECTED DEMOGRAPHIC AND INDUSTRIAL GROUPS DURING THE 1974-75 RECESSION—Continued

Group	May 1974	March 1975	May, June and July 1975
Education:			
Elementary: Less than 8 years	(1)	12.4	(1)
High school:			
1 to 3 years	(1)	15.2	(1)
4 years	(1)	9.1	(1)
College:			
1 to 3 years	(1)	6.9	(1)
4 years or more	(1)	2.9	(1)

¹ Not available.

Source: "Temporary Measures to Stimulate Employment: An Evaluation of Some Alternatives," Congressional Budget Office, Sept. 2, 1975, p. 8.

Escalator clauses have played a significant role in wage determination in union contracts since World War II but they have operated in a cyclical fashion—being very common during periods of inflationary expectations and less common during periods of stable prices. The seventies have shown an increase in escalator clauses but they still cover a small fraction of the American work force. For example, in 1974 the U.S. labor force numbered 91.1 million persons. Average employment for the year in non-agricultural establishments (including government) was 78.3 million. Of this number only 7.7 million of some 9.8 percent were covered by escalation. One million of these workers were U.S. postal service and other government; 3.8 million were in manufacturing (particularly primary metals and electrical and transportation equipment) and 2.9 million in nonmanufacturing (70.0 percent of these being in motor freight transportation, communications and food stores). Thus, escalator coverage is fairly limited to begin with in comparison to the size of the labor force and it is highly concentrated in a few industries. Outside government, this is primarily a reflection of union strength in certain industries. The poor and unskilled have little pushing in their favor.

It might also be pointed out here that the average increase for workers covered by escalator clauses has been considerably less in recent years than the increases in prices. During 1974 the CPI rose by 12.2 percent. Some 31 percent of the workers covered by escalator clauses (mostly in trucking) received less than 2 percent by way of escalator wage increases. Fourteen percent of the covered workers received between an 8 and 9 percent wage increase. Twenty-nine percent of the workers received between 9 and 10 percent. Finally, some 7 percent of the covered work force—under one percent of the entire work force—received increases of 10 percent or more. Thus, escalation clauses do not offset wide-spread protection to the American work force against the burden of higher prices.

The poor do benefit from cost-of-living adjustments, however, in cases where transfer payments are tied to the Consumer Price Index. The main examples of these are social security payments and food stamps.

The purpose of the food stamp program is to provide poor Americans with a cushion against higher food prices. All families/individuals falling below the poverty line are eligible for the program. Yet, despite the rapid expansion of this program over the past few

years, the Senate Select Committee on Nutrition and Human Needs has estimated that only 38 percent of those eligible for food stamps are receiving them. The Joint Economic Committee estimates that in 1971 some 20 percent of the American families/individuals fell into this 'poverty' category. And over half of these units are not benefitting from this cushion of food stamps.

Food stamp bonus payments are tied to the food component of the CPI. Yet, the payment schedule is only revised every six months as an after-the-fact recognition of higher food prices. The interim excess expenditures are not made up, nor is recognition given to anticipation of further food price increases. Thus of the 38 percent of the poor benefitting from the cushion even they suffer from the lag effect of the payments. Further, food stamps do not always cover a family's total food bill, since coverage is on a sliding scale that depends on income.

Thus, while the poor are hurt proportionately more by rising food prices a third of this group is at least partly protected from the impact. Of the two-thirds remaining it is probable that some are benefitting from other transfer payments being used to cover some of the burden of higher food prices. Yet, the above figures indicate that the burden falling on the poor is still very great.

Higher food prices reduce real incomes in the non-farm economy, but increase incomes in the farm sector. Total farm income (net of expenses) increased 43.4 percent between 1972 and 1974. Within the farm sector, however, these gains were not distributed evenly. It is not the small single-family farm that benefitted but rather some 35 percent of this income went to commercial farms with over \$100,000 in sales, which make up only 4 percent of all farms.⁶ (See Table 3).

Thus, while farmers gain at the expense of the consumer, small farmers gain very little at all while large farmers make more substantial gains. The same might be said for the gains of large oil companies—both domestic and foreign—when oil prices rise.

While the income transfers associated with a commodity price inflation tend to be regressive, the wealth effects act in the opposite direction. Higher prices erode the value of fixed value assets and also reduce the real value of debts. Property which is not fixed in value, however, like real estate, will not be affected and may even gain in value relative to the increase in consumer prices. The recession did also produce a sharp decline in equities prices, contributing to a decline in the market value of paper assets.

These wealth effects most likely took their heaviest fall on upper income families. The very poor would not be likely to feel much effect in either direction, since they are neither asset-holders nor debtors (not being good credit risks). The distributional impact among middle-income families is less certain, since the balance sheets of families in middle-income ranges vary widely with respect to indebtedness, net worth, and the composition of assets.

When all the distributional consequences of the recent inflation are considered, there seems to be a strong case that the burden is disproportionately shared by the poor. This suggests that the various macro-economic policy options (considered in the next section) should be

⁶ U.S. Department of Agriculture, Economic Research Service, *Farm Income Statistics*, July 1975.

structured in such a way as to compensate for the disproportionate real income losses at the lower end of the income scale.

TABLE 3.—INCOME AND PRODUCTION EXPENSES OF FARMING BY VALUE OF SALES CLASSES: 1974

[In absolute and percentage terms]

Value of sales classes	Units	Percent of units	Realized gross farm income (millions)	Production expenses (millions)	Realized net income (millions)	Percent of net income	Realized net income per farm
\$100,000 and over.....	115	4.1	\$45,545	\$35,973	\$9,572	34.5	\$83,234
\$40,000 to \$99,999.....	355	12.5	23,785	16,617	7,168	25.9	20,192
\$20,000 to \$39,999.....	588	20.8	19,313	12,707	6,606	23.8	11,234
\$10,000 to \$19,999.....	325	11.5	5,709	3,754	1,955	7.1	6,051
\$5,000 to \$9,999.....	246	8.7	2,375	1,553	822	3.0	3,341
\$2,500 to \$4,999.....	494	17.4	2,632	1,770	862	3.1	1,745
Less than \$2,500.....	707	25.0	1,753	1,031	722	2.6	1,022
All farms.....	2,830	100.0	101,112	73,405	27,707	100.0	9,789

Source: U.S. Department of Agriculture, Economic Research Service, "Farm Income Statistics," July 1975.

POLICY OPTIONS

Inflation, as a dynamic process, occurs because various individual factors in the economy are attempting to offset the distributional consequences of a change in relative prices. Anti-inflation policy can focus either on (1) preventing individuals from taking offsetting actions; (2) providing other, noninflationary offsets; or (3) altering the underlying demand and supply conditions to restore the old relative price structure. Just as the macroeconomic and distributional consequences of inflation depend on the channels through which it is transmitted, so do the appropriate policy responses. For instance, when inflation is caused by an excess demand for labor, fiscal and monetary restraint, by reducing aggregate demand, will alleviate pressure on labor markets and hopefully moderate wage increases. (This is a case of trying to restore the old relative price structure.) Wage and price controls can help to control the leftover effects of inflationary expectations provided demand pressures are reduced. (This is a case of preventing individuals from taking offsetting actions that they perceive to be necessary but are not because the old relative price structure has been restored.) However, wage and price controls alone cannot prevent inflation (without rationing) if excess demand pressures are real. But they can eliminate ripple effects once excess demand is eliminated.

Inflation caused by higher food and energy prices is a different matter. Price increases for food and energy depend on factors that are largely beyond the control of domestic economic policy, at least in the short run.⁷ Monetary and fiscal restraint will only exacerbate the decline in economic activity associated with the drop in households' spending power, increasing unemployment without significantly moderating the rate of inflation.

Price controls on fuel and food are not feasible if higher food and fuel prices reflect real increases in demand relative to supply.

⁷ This is not to suggest that ways should not be found to reduce or eliminate widely fluctuating food and energy prices. International commodity stabilization agreements, measures to increase domestic supplies, etc. are important avenues for avoiding recurrence of the inflationary shocks of 1972 and 1973. The discussion here is limited to short run policy responses once basic commodity prices have risen.

This is not to say that ways should not be found to stabilize demand and increase supply, but price controls are not the answer.

If food and energy price increases cannot be prevented in the short run, the deflationary impact on the economy can, preventing unnecessary reductions in real output and increases in unemployment. The traditional way to offset such declines is to adjust wages, pensions, and income transfers to take account of cost-of-living increases. Sometimes this procedure is institutionalized in "escalator" clauses in wage agreements. In other cases, political pressure is brought to bear: increases in the minimum wage are legislated, social security and government transfer payments raised, and government employee pay increases enacted. But this only adds wage increases to the initial rise in commodity prices. It produces the familiar price-wage-price spiral.

An alternative approach is to rebate the estimated loss in real incomes to households in the form of tax reductions or credits. At the same time, energy and food prices would be removed from cost-of-living wage escalators. Prices of food and energy would rise but these would not be escalated into further rounds of wage and price inflation. Real incomes would also be maintained.

Tax offsets to inflation do not stimulate the economy, since they are designed only to prevent a reduction in real income; and they are a much less inflationary way to offset commodity price increases to a cost-of-living adjustments. Commodity prices are allowed to rise to discourage demand and provide incentive for increased supply. But these increases are not permitted to ripple through the entire economy in the form of higher wages.

Tax offsets of a less inflationary alternative to cost-of-living adjustments may have some drawbacks. Distributional problems arise—but these are also present with cost-of-living adjustments. Tax reductions may benefit some more than others, but it is also true that some people are better able to obtain cost-of-living compensation than others. Timing may also be a factor, but to the extent that cost-of-living increases must be legislated or negotiated, it is not clear which type of offset is more rapid.

It is important to recognize that tax offsets to inflation will only work if the economy is at less than full employment. At full employment, rising resource costs mean that, indeed, real incomes must fall. But at less than full employment, rising natural resource costs can be accompanied by increased utilization of other resources—labor and capital—so that real incomes need not fall at all.

CONCLUSION

In conclusion, the impact of inflation on families depends very much on its underlying causes. Inflation that occurs as a result of higher prices of basic, non-labor, necessities is likely to have the greatest adverse impact—both on the level of economic activity (and hence incomes and employment) as well as the regressive distribution of higher living costs within the household sector. There are ways that government could offset these effects, at least in part. But a fear that these measures might trigger even more inflation as they stimulate economic activity and redistribute income in favor of the poor means that they are likely to be more the subject of debate than policy action.

SITUATION IN HOUSING AND TRENDS AFFECTING THE FAMILY

[By Robert J. Sheehan, National Association of Home Builders]

Private housing starts for the year 1975 are expected to total only 1.15 million units. This year's production level will be the lowest since 1946, and it will be 52% below the record production year 1972 when 2.4 million units were started. In spite of this very low level, a modest recovery has already begun. Private housing starts have moved from an 880,000 unit seasonally adjusted annual rate in December 1974 to a 1.15 million unit in the third quarter of this year. NAHB's 1976 forecast shows a continuation of this moderate recovery, with starts expected to total 1.45 million units.

Why was the housing downturn so sharp and the recovery so modest? The exceptionally strong housing production years 1971, 1972, and 1973 were supported with a very high level of Federally subsidized units. Total starts reached over 2.0 million units during each of these years, and more than 500,000 starts were subsidized in the three year period. HUD's Section 235 and Section 236 programs for low and moderate income families provided a major share of these subsidized starts. This high level of subsidies resulted from housing legislation passed in the late 1960s, when a housing goal was established specifying 26 million units over a ten year period. But in late 1973, the Administration withdrew its support from the Sections 235 and 236 programs.

The Federal government's withdrawal of support to the housing industry was coupled with an economic downturn and rising inflation through 1974. Interest rates increased, and savings left thrift institutions for higher yielding government securities. In 1974, private housing starts dropped to 1.34 million units from 2.05 million units in 1973. By the end of 1974, families experienced a significant drop in personal income in real terms, the threat of unemployment loomed, and high mortgage interest rates were connected with the purchase of a new home. The costs of other housing expenses, transportation, and food also were increasing rapidly. The energy crisis and the jump in oil prices now rested on consumers, who were faced with much higher utility and gasoline bills. These factors forced major shifts in family budgets.

In early 1975, the economy began to turn around. Savings began to flow back into thrift institutions at record rates. During 1974, Administration programs were funded, and new legislation was developed, passed and funded by Congress—thus, providing some support to new homes sales.

Administration programs included \$10.0 billion through the Government National Mortgage Association (Ginnie Mae) Tandem Plan, and a \$3.0 billion special assistance program through the Federal Home Loan Mortgage Corporation (Freddie Mac). The Tandem Plan provides below market interest rates for mortgages insured under FHA and VA homeownership programs. The Federal Home Loan Bank was permitted to extend \$4.0 billion in special advances to member savings and loan associations. The new legislation was a conventional mortgage support program known as the Brooke-Cranston Bill. It provided \$7.5 billion in funding. The total potential of these programs was support for over 650,000 single family sales units. By the end of second quarter 1975, about 175,000 new units had been assisted. Many problems exist with some of these programs, which probably will never reach full potential. However, they may have prevented a total collapse of the new home sales market.

The 1975 sales market also received a big boost from new legislation that allowed a tax credit of up to \$2,000 for the purchase of new units which were in the inventory no later than March 26, 1975.

All of this support to the housing market helped the sales of new one family homes climb from a seasonally adjusted annual rate of 411,000 units in February to 463,000 units in March, and to 570,000 units in April.

These programs directed toward new home sales most certainly have helped the recovery in single family construction. The seasonally adjusted annual rate of starts in this sector climbed 29% between the first and third quarters of this year, or from 740,000 units to 967,000. This year's third quarter rate was 85% of the 1.1 million unit single family rate for the same period in 1973, and it represents a reasonable level of production at this point in time.

Mortgage interest rates should soften during most of next year, and thus provide further help to the single family sector. The strong savings flows in the first half of this year were a sign that mortgage rates would drop in the second half. S&L outstanding advances, which had climbed from \$15.1 billion in December 1973 to \$21.8 billion at the end of 1974, were decreasing; and S&Ls were rebuilding liquidity. Then at midyear, the Federal Reserve Board, concerned about growth in the money supply, turned to restrictive monetary policies—and short term interest rates began to rise again. This increase in short term rates brought the threat of another disintermediation period for thrift institutions, and kept mortgage interest rates at high levels. The FED's recent return to an easier monetary policy should translate into lower mortgage interest rates in the first half of 1976. They should drop from the present 9–9.25% levels to an 8.50–8.75% range.

Fears of renewed significant inflation and a stronger demand in the money markets for capital expenditures and consumer debt will prevent a sharper drop in mortgage rates. The second half of 1976 should see a stabilization of these rates and a slight downturn in single family starts.

The multifamily sector is faced with severe problems and its recovery is likely to be restricted. In third quarter 1975, multifamily starts were at a 292,000 unit seasonally adjusted annual rate, or 68% below the 1973 level of 913,000. This sector has been plagued by over-

building of condominium units and restrictions that have made rental unit construction unfeasible.

Approximately 75% of the condominium construction in the United States occurred in Florida and California in the early 1970s, and Florida alone accounted for more than 40% of the total. A large unsold inventory, especially in Florida, has resulted. In Dade County, Florida (the Miami area) the unsold inventory is estimated to be 30,000 to 35,000 units. Florida's total new unsold condominium inventory approaches 90,000 to 100,000 units, and the level for the entire country is about 175,000 to 200,000 units. In 1973, probably the peak year for condominium production, their total starts numbered about 225,000 units. At present sales rates, many Florida areas have at least a three year supply of units. Any significant upturn in condominium starts in multifamily structures will have to result from penetration of different markets.

Rental units also were overbuilt in most areas of the country at one time or the other over the past ten years. A general statement that this situation still exists is not true. In third quarter 1975, the vacancy rate of all rental units was 6.2%. This represents a continuation of stability in the rate that has occurred in the past year. The current rate, while above the 5.1–5.8% range of the 1969–73 period, is well below the 8% plus levels of the early 1960s. It is also below FHA's 7.5% benchmark for underwriting purposes in which a market can be considered viable.

To a large extent, the lower rental vacancy rates in the 1969–73 period resulted from strong growth in primary individual households among persons who were born during the post World War II baby boom. The increased rental vacancy rate in the 1974–75 period has evolved from inflation and the general economic downturn, which led to shrinking real incomes, and then to delays in household formations, or to doubling up. The economic upturn should reverse this pattern in 1976. This reversal in turn is expected to lead to a tightening in the available rental supply.

A strong upturn in apartment rental units will have to be accompanied with solutions to a myriad of problems that confront developers and builders in this sector. Through zoning and regulation procedures, environmental and no growth groups are putting increasing pressure on local governments to curtail multifamily construction. Frequently, rental projects take 18 to 24 months before a spade of dirt is turned. Fees are also rising rapidly. In Fairfax County, Virginia, the water and sewer tap fee for a single family home increased from \$275 in November 1969 to \$1,625 by April 1975.

The economics of rental construction is not favorable. Financing charges are quite high. Cash flows are not keeping pace with maintenance and operating costs. The consumer price rent index rose 38.4% in the eight year period September 1967–September 1975, or an average annual increase of 4.1%. In comparison, the total CPI rose 63.6%, or an average annual increase of 6.4%. Thus rents have increased at a rate only 60% of that of all consumer expenses.

It is unlikely that 1976 will bring a generally favorable economic climate for new rental construction. Production will be up but only marginally.

What are some of the longer term effects of high construction costs, land prices, and energy costs?

Present demographic trends point toward increased single family demand at the end of this decade and into the 1980s. The proportion of persons 25 to 34 years of age will increase rapidly during this period; persons in this age group are prime homebuyers. They will form families and, although they will not have as many children as their parents had, they will probably still demand three bedroom homes. Costs may push these families toward townhouses (generally a component of the single family sector) and away from detached units. The great American dream will still be a home rather than a unit in a garden apartment or mid or high rise apartment building. The single family market will be helped by increases in family incomes as more women enter the labor force.

At this point in time it might be helpful to discuss in more detail whether families will be able to afford new homes. We recently completed a study which shows that the proportion of families able to afford a new home in 1975, at 22.4%, is close to the 22.9% proportion in 1955. Incomes have increased as rapidly as housing costs.

Rising energy, food, transportation, and other expenses threaten to force more families out of the market. How are builders reacting to this? Their initial reaction has been to reduce the amenities offered in both new for sale and new rental units. For example, the proportion of new homes that had ranges included in the sales price is expected to drop to 77% in 1975 from 96% in 1974. This change was reported in an NAHB survey of builders last spring. They also reported fewer refrigerators, dishwashers, disposals, trash compactors, washers, and dryers. In the spring survey, these builders did not report a decline in size of the homes. Since new units must compete with the existing inventory, changes will tend to be marginal and slow. A growing number of builders are exploring basic homes—units of 1,000–1,200 square feet that can be easily added to in the future. These homes are intended to attract more moderate income families into the market. A combination of basic homes and more townhouses will tend to lower the median square feet of floor area in single family homes in the next few years.

Multifamily construction should have an increasing condominium component. The tax advantages of ownership and the restricted economics of rental construction will be the principal causes of this shift.

In fact, the rental sector may be in short supply by 1977. The present level of vacant units will decline significantly as the low level of new construction and completions fails to keep up with renewed demand as the economy expands again.

Finally, housing families in the United States will continue to be a function of our general economy as it has been in the past. This country's economic system has many problems which must be solved in order to provide stability and growth on a continuing basis.

HOUSING EXPENSES AND INCOME REQUIRED TO BUY A NEW ONE FAMILY HOME, 1955, 1965, 1975

	1955	1965	1975	Percent change		
				1955-75	1955-65	1965-75
Median sales price, new homes sold.....	\$13,400	\$20,000	\$39,000	191.0	49.3	95.0
Loan-to-value ratio.....	75.3	83.3	82.1	9.0	10.6	-1.4
Mortgage amount.....	\$10,090	\$16,660	\$32,019	217.3	65.1	92.2
Length of mortgages (years).....	23	28	28	21.7	21.7	0
Interest rate.....	4.875	5.750	9.000	84.6	17.9	56.5

HOUSING EXPENSES AND INCOME REQUIRED TO BUY A NEW ONE FAMILY HOME, 1955, 1965, 1975—Con.

	1955	1965	1975	Percent change		
				1955-75	1955-65	1965-75
Monthly mortgage payment, total.....	\$77.34	\$128.35	\$333.41	331.1	66.0	159.8
Principal and interest.....	60.87	99.87	261.37	329.4	64.1	161.7
Interests (average for 1st yr).....	40.56	79.30	240.25	492.3	95.5	203.0
Real estate tax.....	13.27	23.34	58.58	341.4	75.9	151.0
Hazard insurance.....	3.20	5.14	13.46	320.6	60.6	161.9
Other monthly housing expense.....	24.32	34.74	77.82	220.0	42.8	124.0
Maintenance and repair.....	7.40	10.58	27.32	269.2	43.0	158.2
Heat and utilities.....	16.92	24.16	50.50	198.5	42.8	109.0
Total monthly housing expense.....	101.66	163.09	411.23	304.5	60.4	152.1
Annual housing expense, total.....	\$1,219.92	\$1,957.08	\$4,934.76	304.5	60.4	152.1
Mortgage payment, total.....	928.08	1,540.20	4,000.92	331.1	66.0	159.8
Principal and interest.....	730.44	1,198.44	3,136.44	329.4	64.1	161.7
Interest (1st yr).....	486.54	951.45	2,882.99	492.5	95.5	203.0
Real estate tax.....	159.24	280.08	702.96	341.4	75.9	151.0
Hazard insurance.....	38.40	61.68	161.52	320.6	60.6	161.9
Other housing expense ¹ , total.....	291.84	416.88	933.84	220.0	42.8	124.0
Maintenance and repair.....	88.80	126.96	327.84	269.2	43.0	158.2
Heat and utilities.....	203.04	289.92	606.00	198.5	42.8	109.0
Years of income needed to qualify.....	2.031	2.014	1.843	-9.3	-0.8	-8.5
Annual income needed to qualify.....	\$6,597.74	\$9,930.49	\$21,161.15	220.7	50.5	113.1
Income taxes withheld for a family of 4, total.....	800.13	1,357.49	4,400.93	450.0	69.7	224.2
Federal income tax.....	687.59	1,102.10	3,195.60	364.8	60.3	190.0
Social security.....	84.00	174.00	824.85	882.0	107.1	374.1
State income tax.....	28.54	81.39	380.48	1,233.1	185.2	367.5
Total disposable income.....	5,797.61	8,573.00	16,760.22	189.1	47.9	95.5
Annual housing expense as a percent of disposable income.....	21.0	22.8	29.4	40.0	8.6	28.9
Percent of families eligible to buy.....	22.9	25.8	22.4	-2.2	12.7	-13.2
Monthly interest payment as a percent of:						
Payment to principal and interest.....	66.6	79.4	91.9	38.0	19.2	15.7
Monthly housing expense.....	39.9	48.6	58.4	46.4	21.8	20.2
Median family income.....	\$4,418.00	\$6,957.00	\$13,991.00	216.7	57.5	101.1
Income taxes withheld for a family of 4, total.....	420.11	821.02	2,661.16	533.4	95.4	224.1
Federal income tax.....	317.00	590.00	1,591.20	402.0	86.1	169.7
Social security.....	84.00	174.00	818.40	874.3	107.1	370.3
State income tax.....	19.11	57.02	251.56	1,216.4	198.4	341.2
Total disposable income.....	3,997.89	6,135.98	11,329.84	183.4	53.5	84.7

¹ Estimate.

Source: NAHB Economics Department; other sources available upon request.

RENT OR BUY: EVALUATING ALTERNATIVES IN THE SHELTER MARKET¹

[By Raymond W. Gieseeman, U.S. Department of Labor, Bureau of Labor Statistics]

INTRODUCTION

The wide variety of choice in today's shelter market, the mobility of American families, and the opportunities for returns on savings in investments other than housing have all contributed to the complexity of decisions on whether to rent or buy one's shelter needs. As a result, a sound decision cannot be based on a simple comparison of the monthly costs for owning and renting. This paper describes a method of analyzing the financial costs and benefits of owning a home compared to renting in combination with a program of regular monthly savings over a specified period of time.

In the sections which follow, step-by-step calculations are given for a hypothetical case to establish a monthly rental rate which, along with alternative investment of monies otherwise needed to own shelter, would yield a sum of money equivalent to that realized by buying and then selling a specified shelter unit after a given number of years. First, the cost aspect of ownership is examined, both initial outlays and regular monthly costs.

Then the investment aspects of owning and renting are viewed. For owners, the investment aspect focuses on expected proceeds from selling the unit after a prescribed number of years. Proceeds include return of the owner's purchased equity and any anticipated gains from appreciation. Renters, to balance any monetary gains from owning, must consider their investment alternatives. That is, they must calculate the return from saving and thus investing monies otherwise required initially to purchase a house (downpayment, etc.), and also the additional returns from a program of saving while renting to help offset regular savings homeowners have through monthly mortgage principal payments, plus any allowance for gain from appreciation. In this way, a monthly rental rate can be established which would permit the renter to equal the gains from homeownership. If shelter which meets the needs and preferences of the renter can be obtained at or below this amount, homeownership is not necessarily financially more advantageous.

¹ These remarks have been condensed from a U.S. Department of Labor publication by the same title. (Bulletin 1823, 1974.) Copies may be obtained by writing Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No. 029-001-01341-8), or Consumer Information, Public Documents Distribution Center, Pueblo, Colo. 81009 (Item No. 245C). Price 80 cents.

THE COST ASPECT

A number of questions need to be answered in regard to shelter costs before making a hypothetical comparison in a specific case: What can the prospective owner or renter afford to spend? How different are the costs of ownership and rental? How does price change over time affect these costs? How do savings on personal taxes affect homeowner-ship costs?

There are no hard and fast rules on how much to spend for shelter. The amount is influenced by personal considerations and income. Commonly heard rules of thumb suggest that the average family or individual should spend about one-quarter of income for shelter (sometimes stated as "one week's pay out of every month"), and that a buyer ordinarily looks for a house within $2\frac{1}{2}$ times his annual income.

Information on actual shelter expenditures obtained by the Bureau of Labor Statistics in a national survey in 1960-61 indicates that, on the average, owners and renters spent 16 percent of their annual after-tax income on shelter, including utilities. For homeowner families, shelter expenditures included outlays for mortgage interest, property insurance and taxes, maintenance and repairs, and utilities, and averaged 15 percent of after-tax income. This figure would have been about 20 percent if mortgage principal payments of homeowners were included. For renter families, shelter outlays, including utilities, averaged 18 percent.

Results of the survey also indicate that well-to-do families spend a smaller proportion of income on shelter than less well-to-do families. This is equally true of homeowners and renters.

An important factor affecting costs of owning and renting over time is price change. Home purchase prices and mortgage interest rates have moved upward in recent years, as have property taxes, property insurance rates, and prices of maintenance and repair items and services. For example, in August of this year, prices for these elements of shelter, as measured in the Consumer Price Index, were almost 80 percent higher than in December 1967.

The price change cited applies to all homeowners, including current-year homebuyers. However, the vast majority of homeowners own homes that were purchased in earlier years. Costs for these owners are not affected by changes in home purchase prices and mortgage interest rates. For these owners, shelter costs rose 29 percent between December 1967 and August 1975. This increase does not include effects of price change for fuel and utilities which rose 68 percent over the same period.

For renters, increases in costs were similar to those experienced by homeowners, as landlords passed on increased costs resulting from higher taxes, insurance rates, and prices for maintenance and repairs, and prices for utilities when included in the rent. Contract rent levels rose 36 percent from December 1967 to August 1975.

Thus, it can be seen that, over time, homeownership costs and rental rates tend to respond similarly to price change, although changes in housing needs and the responsiveness of local housing markets to these needs may affect the relationship in particular places at particular times.

Homeowners may benefit by being able to deduct part of their ownership costs when filing their income tax returns, and thereby lower their shelter costs. Amounts spent for interest and taxes are deductible items in Federal and many State and local returns. The amount of these savings depends upon income and the amount of other expenses that can be itemized. Renters do not have similar tax benefits for any portion of their shelter outlays.

OWNERSHIP COSTS

Downpayment.—Few home buyers can purchase a house outright. Typically, the buyer makes a downpayment and arranges to have the balance financed. The amount of downpayment depends on the value of the property and the amount the lender agrees to finance. There are no minimum downpayment requirements for conventional loans, but the amount commonly runs between 10 and 25 percent of the appraised value. The downpayment for government-backed loans is also determined by agreement between the buyer and the lender, but minimum requirements have been established by law. For FHA loans, the buyer must pay at least 3 percent down on the first \$25,000, 10 percent on the next \$10,000, and 20 percent on the excess over the \$35,000. There is no minimum downpayment required for VA loans unless the asking price exceeds the appraised value of the property.

Settlement costs.—Another item of cost in buying a house is *settlement*. These costs are incurred when property is exchanged. They include closing costs, loan discounts, prepaid items, and sales commissions. *Closing costs* are charges for obtaining the mortgage loan and transferring the title. A *loan discount* is a charge assessed by a lender to improve his return (these are sometimes called mortgage points). *Prepaid items* are amounts required for advance payment of real estate taxes, insurance premiums, and other assessments such as fees for neighborhood improvements.

For buyers, settlement costs include closing costs and amounts for prepaid items. Settlement costs for sellers include loan discounts and sales commissions.

In a 1971 study of applications received for government-backed loans, settlement costs averaged about 10 percent of the contract sale price. The two most important costs were the loan discount, or mortgage points, and sales commission. Both of these costs were incurred by the seller. Based on the study, settlement costs amount to between 2 and 2½ percent of the market price for the buyer and 7½ to 8 percent for the seller.

Monthly mortgage payments.—The price and amount paid down on a home determine the size of loan required. The mortgage term (years to maturity) and the rate of interest determine the cost of financing such a loan. The following example illustrates how the cost of financing is affected by the mortgage term and the interest rate.

Suppose a \$30,000 house is purchased with a \$3,000 downpayment and balance of \$27,000 is financed for 20 years at 8 percent interest. From table 1, the monthly mortgage payment would be \$225.99 ($27 \times \8.37), and the total cost of the loan would be \$54,243 ($27 \times \$2,009$). Increasing the mortgage term from 20 to 30 years would

lower the monthly payment to \$198.18, but would increase the total cost of the loan to \$71,334.

Monthly mortgage payments for principal and interest established at the time of purchase do not change during the life of the mortgage unless the loan is refinanced. Other monthly costs, as discussed below, will vary over time due to price change.

TABLE 1.—COST OF FINANCING \$1,000, SELECTED YEARS AND RATES OF INTEREST

Rate of interest	Years financed					
	20 yr		25 yr		30 yr	
	Monthly cost	Total cost	Monthly cost	Total cost	Monthly cost	Total cost
7.....	\$7.76	\$1,862	\$7.07	\$2,121	\$6.66	\$2,398
7½.....	8.06	1,934	7.39	2,217	7.00	2,520
8.....	8.37	2,009	7.72	2,316	7.34	2,642
9.....	9.00	2,160	8.40	2,520	8.05	2,898
10.....	9.66	2,318	9.09	2,727	8.78	3,161

Other monthly outlays.—In addition to the monthly mortgage payment, other shelter outlays incurred on a regular basis are those for real estate taxes, property insurance premiums, costs of maintenance and repairs (condominium fees for some), and allowances for fuel and utilities. Excluded from this discussion are major improvements to house and grounds.

Estimates for some types of costs—taxes, insurance, and utilities—can usually be obtained from the seller or the real estate agent. (Also, tax rates are a matter of public record and can be verified in the appropriate local office of government.) Maintenance and repair costs are more difficult to estimate for a particular house. In a 1968 study, annual maintenance and repair costs were estimated to run from $\frac{3}{4}$ to 1 percent per year of the value of the property.²

Some idea of these costs can be obtained by examining various monthly shelter costs of new homes with FHA-backed loans in 1971 shown in the tabulation below. The average price for the house associated with these costs was \$23,835. Also note effects on these costs when they are updated for changes in price between 1971 and August 1975 as indicated by the BLS Consumer Price Index.

	Monthly cost, 1971	Price increase, 1971-75 (percent)	Estimated monthly cost, August 1975
Real estate taxes.....	\$34.79	21	\$42.10
Property insurance.....	10.16	11	11.28
Maintenance and repairs.....	13.29	41	18.74
Utilities.....	26.87	47	40.00
Total, 4 items.....	85.11		112.12

² John P. Shelton, "The Cost of Renting Versus Owning a Home," *Land Economics*, February 1968, pp. 59-72.

POTENTIAL TAX SAVINGS OF HOMEOWNERS

One of the potential benefits of homeownership is a reduction in the amount of personal income tax that must be paid. Interest paid on the mortgage and real estate taxes are deductible under Federal and most State and local income tax regulations, if deductions are itemized.

The effect of these savings when prorated monthly is to lower the homeowner's gross monthly outlay for shelter. The amount of such savings depends on the amount of income that would be taxed if there were no deductions associated with homeownership, and on the rate of taxation on this income.

To illustrate the tax saving, consider a married head of household with an income of \$15,000 who files a tax return and claims 3 dependents. Further, assume expenses that can be itemized on his tax return, excluding amounts for mortgage interest and real estate taxes, are \$1,600. The tax liability with and without deductions for mortgage interest and real estate taxes might look like this:

	Without deductions	With deduction
Income before taxes.....	\$15,000	\$15,000
Less deductions:		
Real estate taxes.....		504
Mortgage interest.....		2,164
Other deductions.....		1,600
Standard deduction.....	2,000	
Less personal exemptions.....	3,000	3,000
Equals taxable income.....	10,000	7,732
Tax liability:		
Annual.....	1,820	1,329
Monthly.....	152	111

The \$504 for real estate taxes is based on a \$42 monthly outlay cited earlier. The amount of monthly tax saving for the homeowner by itemizing is \$41.

Typically, the amount of interest paid on home loans is highest in the first year and declines over time as the loan balance declines. (See table 2.) In the above example, mortgage interest was based on a \$27,000 loan at 8 percent interest. Monthly payments were \$198.18. The amount for mortgage interest was calculated as follows:

$$\$198.18 \times 12 \text{ months} = \$2,378.16$$

$$\$2,378 \times .91 \text{ (table 2)} = \$2,163.98$$

Although the amount for mortgage interest that can be deducted declines over time, it is likely that this loss will be offset in part by higher property taxes and higher tax brackets when income increases over time.

TABLE 2.—MORTGAGE INTEREST AS A PERCENT OF ANNUAL MORTGAGE PAYMENTS IN SELECTED YEARS, FOR SELECTED MORTGAGE TERMS, AT DIFFERENT RATES OF INTEREST

Interest rate	1st year	5th year	10th year	15th year	20th year	25th year	30th year
Life of mortgage—30 years:							
7-----	87	83	76	66	52	32	4
7½-----	89	86	79	68	55	34	4
8-----	91	88	81	71	57	36	4
9-----	93	90	84	75	61	39	5
10-----	95	92	87	79	65	42	5
Life of mortgage—25 years:							
7-----	82	76	66	52	32	4	-----
7½-----	84	79	68	55	34	4	-----
8-----	86	81	71	57	36	4	-----
9-----	89	84	75	61	39	5	-----
10-----	92	87	79	65	42	5	-----
Life of mortgage—20 years:							
7-----	74	66	52	32	4	-----	-----
7½-----	77	68	55	34	4	-----	-----
8-----	79	71	57	36	4	-----	-----
9-----	82	75	61	39	5	-----	-----
10-----	85	79	65	42	5	-----	-----

THE INVESTMENT ASPECT

The investment aspect of shelter decisions concerns whether it would be better to invest money in homeownership over a period of years or save the downpayment money and set aside an amount each month, putting these funds into a savings account or stocks and bonds, and so on.

Buying a home requires enough money to make a downpayment on the purchase. This can be an important barrier to homeownership for many who do not have adequate savings. On the other hand, when savings are sufficient to allow a choice, there is need to weigh the advantages of investing savings in shelter compared with other investment forms.

Renters do not have the long-term commitment to save regularly that homeowners have taken on through long-term financing of their home purchase. However, when the monthly cost to rent is less than to own, renters also have this same opportunity to save regularly. When these savings can be invested along with the initial costs of homeownership, investment returns while renting can be attractive.

ESTIMATING NET PROCEEDS FROM SALE OF HOUSE

From an investment viewpoint, the decision to purchase a house or other shelter should include an estimate of what the net proceeds would be if the house were sold at some future date. This necessitates making some estimate of the length of time the unit will be owned and its likely market value at the projected date of sale.

Estimated future value.—The future market value of a house depends on its location, age and structural condition, its adaptability to the needs of buyers, and general economic conditions. Neighborhood and community characteristics also have an effect on its future market value. In some localities, houses on an average may appreciate as much as 4, 5 or 6 percent a year, or more; in others, they may bring less than originally paid.

Two factors that make appreciation more likely are (1) rising construction costs, and (2) the higher cost of land suitable for building sites. Available information suggests that between 1960 and 1972, construction costs and site costs increased at an average annual rate of 5 percent. When the cost of new homes goes up, homebuyers tend to bid up prices for existing homes.

TABLE 3.—FACTORS FOR COMPOUNDING RETURNS AND COSTS, SELECTED INTEREST RATES AND TIME PERIODS

Interest rate	5 years	10 years	20 years	30 years
4-----	1.217	1.480	2.191	3.243
5-----	1.276	1.629	2.653	4.322
6-----	1.338	1.791	3.207	5.743
7-----	1.403	1.967	3.870	7.612
8-----	1.469	2.159	4.661	10.063

A table of compound interest (see table 3) is helpful in estimating the future market value of a house. To continue with the \$30,000 home purchase cited above, let it be assumed the house will appreciate as much as 5 percent a year for 10 years. Its estimated future market value would be \$48,870 ($\$30,000 \times 1.629$).

Deductions from future sale price.—In addition to the estimated market price at the time of sale, the value of a homeowner's investment in the house depends on selling costs and any debts or liens against it. If the house is financed, it will be necessary to determine how much is still owed on the mortgage at the proposed sale date.

In most home financing, loans are amortized, or paid off, by a sequence of equal monthly payments over a number of years. Since the loan balance is highest when the loan is first obtained, the amount going for interest consumes a major portion of the monthly payment, and only a small amount of the monthly payment goes to the purchase of additional equity. Thus, if a house is sold after a 5- or 10-year period, a substantial portion of the proceeds may be needed to retire the balance of the mortgage. (See table 4.)

For an 8-percent 30-year loan on \$27,000, the mortgage balance still owed after 10 years is \$23,760 ($\$27,000 \times .88$).

TABLE 4.—PERCENT OF ORIGINAL LOAN AMOUNT STILL OWED AFTER SPECIFIED NUMBER OF YEARS, FOR SELECTED MORTGAGE TERMS, AND AT DIFFERENT RATES OF INTEREST

Interest rate	After 5 years	After 10 years	After 15 years	After 20 years	After 25 years	After 30 years
Life of mortgage—30 years:						
7-----	94	86	74	57	33	0
7½-----	95	87	75	59	34	0
8-----	95	88	77	60	36	0
9-----	96	89	79	63	39	0
10-----	97	91	82	66	41	0
Life of mortgage—25 years:						
7-----	91	79	61	36	0	-----
7½-----	92	80	62	37	0	-----
8-----	92	81	64	38	0	-----
9-----	93	83	66	40	0	-----
10-----	94	85	69	43	0	-----
Life of mortgage—20 years:						
7-----	86	67	39	0	-----	-----
7½-----	87	68	40	0	-----	-----
8-----	87	69	41	0	-----	-----
9-----	89	71	43	0	-----	-----
10-----	90	73	45	0	-----	-----

If a house is sold at the original purchase price, net proceeds should equal the amount originally invested in downpayment, *plus* whatever portion of mortgage payments has been applied to reduce the principal, and *minus* selling costs and any taxes owed. However, if the house has risen, net proceeds may amount to more than the owner's purchased equity.

For example, the \$30,000 house was purchased with a downpayment of \$3,000 and the remaining \$27,000 was financed at 8 percent for 30 years. Settlement costs were \$600. After 10 years, the house is sold for \$48,000, and selling costs are \$3,840 (8 percent of market value). The net proceeds and gain from sale of the house might look like this:

Sale price of house.....	\$48, 000
Less amounts owed:	
Selling costs.....	3, 840
Mortgage balance owed.....	23, 760
Net proceeds.....	20, 400
Less amounts invested:	
Downpayment and settlement costs.....	3, 600
Reduction in mortgage balance (principal payments).....	3, 240
Gain from appreciation.....	13, 560

Proceeds shown here do not take into account the possibility there may be taxes on part of the gain. This gain is not taxed when reinvested in another owner-occupied house whose market price equals or exceeds the price received for the old house, less selling costs and allowable expenses for improvements.

ALTERNATIVE INVESTMENT OPPORTUNITIES

Downpayment and settlement savings.—Invested in a savings account, funds (the equivalent of which the homeowner uses for downpayment and settlement costs) may earn 4, 5 or 6 percent a year or more, net after taxes. The value of investing a sum of money for a period of time can be estimated from table 3.

In the example used to illustrate ownership gains, \$3,600 was invested in downpayment and settlement costs for a house that was owned for 10 years. If this same \$3,600 had been invested at a 5-percent annual rate of return for a period of 10 years, its 10th-year value would be \$5,864 ($\$3,600 \times 1.629$).

The amount is not sufficient to offset possible gains from homeownership over the same period. However, at this point, possible differences in monthly costs of owning and renting have been neglected. Also neglected is the aspect that owners are "forced" to save regularly through monthly mortgage principal payments. Renters have no similar commitment to save.

Regular monthly savings.—In the example above, net proceeds from sale of the house were \$20,400 after 10 years. If alternatively, \$3,600 in downpayment and settlement costs had been invested at rates specified for 10 years, the amount would have been \$5,864. The result is an apparent investment edge in favor of ownership.

Additional savings are needed to offset the benefits a homeowner would have by saving regularly through mortgage principal payments and having a house that appreciates in value over a period of years.

These savings are possible when the monthly cost to rent is lower than the monthly shelter outlay to own.

In the present instance, another \$14,536 (\$20,400-\$5,864) is needed to equalize the alternative investment while renting with the net proceeds from owning over a 10-year period.

By utilizing information contained in table 5, it is possible to determine the additional amount of monthly savings needed while renting. If the rate of return is 5 percent, the value of \$1 saved each month for 10 years is \$154. To find the monthly savings needed to accumulate an additional \$14,536, divide the amount by \$154. Thus, $\$14,536 \div 154 = \94.39 .

Where does the renter realize these savings? For this purpose it is now necessary to bring together the regular monthly costs of ownership outlined above. From this amount allowances are made for tax benefits to homeowners and savings needed while renting. The result is a monthly amount for rent that allows for a balance between investment gains from owning and renting.

TABLE 5.—FACTORS FOR USE IN ESTIMATING ACCUMULATED SAVINGS, SELECTED INTEREST RATES AND TIME PERIODS

Interest rate	Value of savings of \$1 per month in number of years			
	5 years	10 years	20 years	30 years
4-----	\$66	\$147	\$364	\$685
5-----	68	154	406	815
6-----	69	162	453	975
7-----	71	171	508	1,169
8-----	73	180	569	1,409

Monthly homeownership costs:	
Mortgage payment-----	\$198
Other monthly costs-----	112
Total-----	310
Less monthly tax savings-----	41
Net monthly homeownership costs-----	269
Less monthly saving while renting-----	94
Amount available for monthly rent-----	175

For the situation specified, it is advantageous to rent when the monthly rental rate is below \$175.

Additional examples and a more extensive treatment of the topic are given in the BLS publication from which these remarks were drawn. The publication also outlines a 6-step procedure which can be used to work through examples that may be more meaningful for your needs and conditions in your locality.

HOW HOUSEHOLDS USE ENERGY

[By Dorothy K. Newman and Dawn Day] ¹

INTRODUCTION

In an earlier incarnation when I served the Federal Government for 30 years, the Department of Agriculture's Annual Outlook Conference was a special highlight of the fall season. Those of us who were engaged in taking the nation's economic pulse almost daily looked forward to this conference where we knew we would be presented with a broad spectrum of information that would pique our curiosity, broaden our horizons, and make us better analyzers and predictors.

The only reason this year's Outlook Conference finds me on the podium instead of in the audience with you, is that I stopped taking economic readings and discovered, you'll forgive me, a more consuming subject—energy. Energy not only runs the country, it may be running away with it.

I will discuss with you today the findings from our study about how American households use energy. The findings are based in part on two national sample surveys—one of households, and the other, of the electric and natural gas utilities that serve them. The first survey found out about the energy-using characteristics of the households themselves and of their dwelling in the spring of 1973. Utilities (after authorization from the households) provided the actual amount and cost of the electricity and natural gas their customers used in a 12-month period in 1972-73.

The two sets of information—from households and their utilities directly—make it possible to match the exact amount and cost of electricity and natural gas used with each household's characteristics and the characteristics of their home. Answers from the households gave the basis also for getting information about car and gasoline use.

The work was done in the Washington Center for Metropolitan Studies with funds from the Ford Foundation.

The study provides two kinds of results—first, descriptions of what is true about household energy consumption, and second, a basis for answering some key questions.

Our book, *The American Energy Consumer*, was published last June by the Ballinger Publishing Company, Cambridge, Massachusetts. These are some new facts from it.

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Views expressed are the authors'.

THE HOUSEHOLD AS ENERGY CONSUMER

The main findings are repeated in virtually every area into which the investigation reached. They show, without doubt, that the more money you have, the more energy you use at home and in your automobile. This is regardless of any other condition—climate; how and how far you commute to work; the size of your house; your age; number in the household; and whether or not your house is protected from the weather by insulation, for instance. Paradoxically also, the better off you are, the more likely you are to have equipment that saves energy, as well as a house and equipment that uses a lot of energy.

Another key finding is that almost all households have a circumscribed choice, especially about the most energy-related features of their house—the design, the furnace and the water heater. The structure and built-in equipment are there when most all households buy or rent a dwelling. If you judge energy use on the basis of the number of major appliances in a home, as many do, you would be right, but only because the presence or absence of major appliances is a key indicator of total energy consumption and is linked chiefly with income. Appliances, which are usually bought separately and not built-in, do not use much energy by themselves. Therefore, what one chooses and buys separately is less important to the energy consumed at home than the basic features of the structure, about which a household has had little to say.

Limited choice is reflected also in the degree to which households use automobiles. Whether poor or rich, few workers felt they had a choice in how they commuted to their jobs. Either they used a car or had a time-consuming struggle with poorly routed public transportation. Therefore, almost all the chief breadwinners in American families use a car to get to work.

Lack of choice reaches far and deep. Exclusionary housing patterns affecting lower-income and black households leave them even less choice than others in the dwelling they live in, and therefore, in the energy-using features of their homes. Automobiles have become more energy using and more expensive. We found that the 1973–74 price increases, during the energy crisis, were greatest for compacts that cost and weigh the least. Those who produce homes, and the facilities in them that determine how much energy people use, have been making their products more energy-consuming and costly. For instance, a frostless refrigerator (virtually all a consumer can buy these days) uses two-thirds more energy than a regular refrigerator and, if you can find one, today's regular kind uses over twice as much energy as the models sold in 1950.

The costs are increasingly burdensome on those at the lower end of the income range, who have fewest options. They are least able to afford the sharply rising prices of every energy source. In addition both electricity and natural gas prices are ordinarily higher the less you use. Low-income households, who use least, pay more per unit (that is, per million Btu's) than the well-off.

The inevitable conclusion is that households may be able to play only a modest role in energy conservation by themselves. Possible exceptions are the well-off who have most options. But even they are

locked into a given housing stock and certain transportation alternatives. Conservation, then, is everybody's business if the public is to save energy. To a large extent the buck passes to commerce and industry; to State and local governments that can modify land-use, zoning and building-permit regulations; to various arms of the Federal Government that administer or enforce housing laws and utility and environmental regulations; and, finally to the Congress. The Congress could enact legislation that would remove some large remaining road-blocks that hinder free choice and energy-saving alternatives in housing and transportation. If households had more choice, they would save energy. We found that people at all income levels were aware of how to save.

Let me illustrate some of these points.

THE DWELLING

The basic level of household energy use for heating, which accounts for most of every family's energy consumption, is determined by climate and the structure of the dwelling itself. Once location is decided, climate is outside the household's control. The dwelling structure is usually outside the family's control as well. Most people live in homes built long before they moved in. Even families buying a new house have little to say about the design. Their new home is likely to be one of a dozen or more mass produced for sale by a developer using a set of master blueprints, rather than a home the family built for themselves.

An important principle of energy conservation is that the more a dwelling is protected from the weather, the less energy it needs for heating. This—all other factors being equal—an apartment uses less energy than a row house (or town house) of the same size, a row house less than a semi-detached house, and a semi-detached house less than a free-standing single-family home.

A dwelling's foundation protects it from the chill that rises from the ground. A basement protects a dwelling most, a concrete slab less, and a crawl space least.

The type of heating system makes a difference. An electrically heated home requires about twice as much fuel per unit of heat as a similar gas- or oil-heated home. The presence of at least one thermostat or radiator valve is important in order to permit the family to control room temperature.

Any openings in a building, such as doors or windows, are places for heat to escape in the winter or to enter in the summer. The type of window also makes a difference. The most common type of window—double hung—is the most energy conserving. Casement and sliding windows are less energy conserving since they have more crevices and leaking areas for hot or cold air to move in or out. Wood frames provide better protection than metal. double-glazed (thermo-pane) glass more protection than conventional (single-glazed) glass. The larger the window, the more heat is likely to be lost. Storm windows, storm doors, and weatherstripping can reduce heat loss.

Most of these structural characteristics that affect energy use are determined at the time of construction and may be impossible or at least difficult and expensive to change. This is true of square feet of

floor space, size, shape, number of windows and doors, degree of insulation, and type of roof and foundation.

In the face of these facts, analysis of data from the U.S. Bureau of the Census show a distinct trend toward more energy-using characteristics in the design of American dwellings. For instance, the single-family home—the most energy-using type of structure—has become more common, rising from housing two-thirds of all American households in 1940 to three-quarters by 1973. (Table 1)

Also, the new one-family houses being built and added to the housing supply each year have an increasing number and proportion of energy-using features. More and more homes are being built with electric heating, central air conditioning, and slab foundation. And the trends are sharp. (Table 2)

Even though new housing is a small percentage of the total housing stock, it is an important part, because it will remain and influence household energy use for years to come.

Home improvements are possible, but the most energy-saving—such as installation of storm windows and insulation—are expensive. The initial cost is beyond the ability of poor and many lower-middle-income households to pay out directly, and credit costs are high. For many households installation depends on the landlord. And the poor and less well-off have more windows in their homes that are without storm sash. The poor and less well-off are also the most likely to be without insulation. And further, if you heat with natural gas, as most do, a storm window will pay for itself in as few as 10 years only in very cold climates. (Table 3)

Although families may not be able to afford them or to save money by installing storm windows, the energy savings possible are high and could be very important to the country. A home with the average number of windows (12) would conserve over 20 million Btu's of natural gas in a year. This is the equivalent of 13 percent of the natural gas used by the average family that uses natural gas for heating. (Table 4)

LIFESTYLE—THE FAMILY'S USE OF THE HOME

While the structure of the dwelling determines a basic level of energy use, the family's style of living can make some difference. For example, a family can influence its own energy use by turning down the thermostat in winter or turning off the natural gas pilot light in summer.

The survey findings show that households generally tended to keep their winter home temperature between 70 and 72 degrees during the day and below 70 at night. These temperatures were reported in the spring of 1973, even before the Government urged us to "dial down." (Table 5)

FURNACE PILOT LIGHTS

Turning off the pilot light of a natural-gas furnace during the summer is a good way to save energy. In the summer before the energy crisis of 1973–74, about 13 million households saved energy by having their pilot lights turned off in the summer. Another 25 million left their furnace pilot lights on. If these 25 million households had turned off their furnace pilot lights, the country would have saved 58 trillion Btu's of energy, about one percent of the total natural gas households

consumed in 1972-73. The dollar savings per household would have been about \$2.70 and is about \$5.00 today.

This low dollar savings is little incentive, especially when you have to call the gas company to turn the pilot light off in the spring and light it in the fall. If the gas company charges the household directly for this, and many do, the charge could wipe out the dollar savings.

WHAT ABOUT APPLIANCES?

Cooking and refrigerating appliances account for about 6 percent of all personal energy consumption. Other appliances and lighting use an additional 9 percent—15 percent in all.

How much energy an appliance uses in a given year depends on how much energy it takes to run the appliance per second or per hour and how much the appliance is used. For example, the average wattage (energy per second) of a microwave oven is 1,450. This is over 4 times the wattage of a 12 cubic foot frost-free refrigerator. Yet over a year, the oven uses less than a fifth as much energy as the refrigerator, because the refrigerator is plugged in all the time while the microwave oven is very seldom in actual use. (Table 6)

Most electrical and gas appliances on the market have increased in energy use per appliance since the 50's. For instance, in 1950 a prosperous homeowner could buy something called a home freezer cabinet (using 620 kwhr per year). By 1959 the freezer was on the market (using 860 kwhr per year). By 1969 the thing to buy, if budget permitted, was a frost-free freezer (using 1,761 kwhr). The increase in size and convenience is undeniable. So is the increase in energy use (180 percent). Increases occurred elsewhere too. The room cooler (935 kwhr) became the window air conditioner (1,389). The wringer washer (45 kwhr) became the automatic clothes washer (103 kwhr).

APPLIANCE OWNERSHIP

Not every household has all types of appliances. Refrigerators, stoves, and television sets are most common—almost all households have them. Three-fourths of all households have clothes washers too, either wringer or automatic. About half of all households have clothes dryers. A third have food freezers. Substantial differences exist between households in appliance ownership, by income class. (Table 7)

Consumers may exercise considerable discretion in buying appliances and water heaters since the equipment is often not part of the structure. But even here choice is limited. First of all, a family may not be able to afford the item. A family trying to make ends meet would have little incentive to replace an electric with a more energy-conserving gas water heater, for instance.

A customer is limited by what is available in stores. For example, virtually all refrigerators now sold at retail are the more energy-intensive frost-free variety. Bearing this out, all refrigerators priced for the Consumer Price Index of the Bureau of Labor Statistics are frost-free.

THE ENERGY GAP

The energy gap like the income gap poses significant public policy problems.

Now that Americans have learned that fossil fuel energy, like all natural resources, is finite, they must consider distribution and pricing policies to give all Americans a fair share of energy. Present maldistribution must be recognized as well as the possibility of present and future shortages.

The poor use less; they pay higher prices for the energy they must have; and they, more than any other group of Americans, suffer from exposure to the noxious by-products of energy consumption and production.

Energy use by the poor is almost entirely for essentials—space and water heating, cooking, food refrigeration, and lighting.

When fuel supplies are limited and increasingly expensive, the wealthy can buy as much as they want, if price is the only obstacle. The poor, on the other hand, are inevitably deprived by rising costs. They are forced to forego some measure of pleasant or necessary life support—if not in heat and light or in gasoline for necessary transportation, then in the loss of amenities.

In 1972–73 poor households used an average of 207 million Btu's of natural gas, electricity and gasoline. The well-off used more than twice as much. The middle-income groups fell between.

The same stairstep pattern occurs for each fuel separately. The incline of the steps differs, however. (Figure 1)

As income rises, the increase in natural gas consumption is gradual; the increase in electricity is intermediate and the increase in gasoline is sharp. The well-off use almost one and one-half as much natural gas as the poor, over two and a quarter as much electricity, and over five times as much gasoline. The well-off use more of each than the middle-income groups, but the differences are not as great.

Natural gas is used primarily for heating and cooking. It seems reasonable that, for these necessities, the less advantaged cannot reduce consumption much below that of the well-off. Conversely, there would seem to be little reason for the well-off to increase their consumption greatly.

Electricity is used mainly in appliances and lighting, and this is part luxury and part necessity. Here as with natural gas, there seems to be a point when the well-off prefer to spend their money for things other than electricity-using devices.

Gasoline is truly the fuel of both necessity and pleasure. Gasoline may be necessary for shopping and commuting to work, but many gallons of gasoline are consumed on family vacations, weekend excursions, second cars, extra large cars, and so on. It is for these reasons that the well-off use more than five times as much gasoline as the poor and more than twice as much as the lower-middle group.

ENERGY IN THE HOME

Poor and lower-middle-income households use less fuel for the essentials of heating, lighting, and cooking because they are forced to be thrifty, and because their homes are modest. They are more likely to live in apartments or homes with only a few rooms and a few windows. (Table 8)

Virtually all poor households have a refrigerator, a stove, and a television, however. The refrigerator and stove are unquestionably neces-

sities, by today's American standards; television provides an economical form of entertainment. With any particular appliance, the poor are less likely to have the more energy-intensive model. For example, the poor are less likely than other households to have a color TV or frost-free refrigerator. Aside from the refrigerator, stove, and TV, poor households are much less likely than others to have and enjoy the convenience of major appliances. (Table 7)

ENERGY ON THE ROAD

The energy gap is greatest in gasoline use. Almost half of all poor households and over 15 percent of all lower-middle income households have no car. The well-off have more than one car.

Poor and lower-middle households with cars use less gasoline because they go fewer places and because their cars get better gasoline mileage. They get better mileage because the older cars these groups own tend to weigh less than newer models and are without such gasoline-consuming extras as air conditioning and power steering. (Tables 9 and 10)

POLICY IMPLICATIONS

This has been a quick overview of how much energy households of different kinds use, how they use it and to what extent they can conserve it.

Policies must take into account that poor and lower-middle-income groups can afford and use least energy, are able to conserve it least and suffer the consequences of its production most. The affluent can afford and use most energy, have and buy energy-conserving features and are the most likely to be protected from air pollution originating from such sources as electricity generation and the use of gasoline.

The average income of the well-off is almost 10 times that of the poor. The difference between the average wealth of the well-off and poor is even greater. The capacity of less advantaged households to buy expensive energy-using or energy-conserving goods or services is even more severely limited than income-related figures alone show. This is especially true for items that are costly both in the energy and money required to produce them as well as in the energy and cost to operate them.

When both the security of accumulated assets and income are taken into account, the energy gap is indeed huge. The rich tower over all, with their jet vacations, multiple homes, and multiple cars.

What are a few of the policy implications of all this? Let me just sketch three broad principles.

First, schemes that treat all households alike, as though they can save fuel proportionately as much, or pay for it as easily, may be politically palatable but are unrealistic. The schemes are not likely to be the most conserving; they could result in serious hardships; and very importantly, they are easily evaded by the canny and well-off.

Second, schemes that assume all households are energy gobblers are due to fail. The average American is not as affluent as most policy-makers and is already conserving and economical.

Third, schemes that find a way to reduce consumption among the most well-off without further disadvantaging the least well-off will save a lot.

The specific policies we recommend emphasize increased freedom of choice; increased pricing equity, and strongly enforced programs that increase energy-conserving housing, especially for poor and lower-middle-income families.

With that in mind, we have made a series of recommendations:

That a large-scale, energetic program of housing loans and subsidies be introduced to encourage energy-saving renovation and construction for low- and middle-income families, coupled with elimination of exclusionary zoning and land use policies that may bar access to less energy-consumptive housing for such families.

That State public utility commissions introduce a flat rate structure supplemented by a system of peak-load pricing for electricity.

That Federal support be given to the National Conference for Building Codes and Standards (a State-oriented organization) in developing and promoting standard building codes, especially the suggested "Standard for Energy Conservation in Buildings."

That a substantial support program should be planned and coordinated among the relevant Federal agencies, for improving building technology and design to conserve energy.

That the consumer become more significant in the concerns of the Federal Power Commission and State Utility Commissions by, for example, including more consumer representatives on these regulatory commissions and excluding persons from the energy industries.

That "Truth in Energy" legislation require labeling information on car weight and gas mileage and on the efficiency of home equipment and appliances.

That a Federal transportation tax be imposed on all cars weighing more than 2,750 pounds, and a second tax be imposed on the gasoline for these cars, with the revenues collected to be paid into a trust fund for public transportation systems.

If there is one thought that I would leave you with, it is that a national commitment to sound energy policy cannot be achieved by asking people to turn off their lights and use their appliances less. It requires nothing less than the recognition on the part of all the elements: Business, Government, regulators, and consumers, that small measures will not be equal to the large change in national habits that lies before us if we hope to make a difference.

I thank you for your kind attention. Once again it has been my pleasure to participate in an Outlook Conference, and this time I have special reason for hoping that it also has been yours.

NOTE

Four income groups are used in this analysis: the poor, lower-middle, upper-middle, and well-off. Families and individuals were defined as poor if their incomes fell below certain levels. The levels varied with size of the family and were based on the U.S. Government's definition of poor and near-poor for 1972. In our study, the average income of poor households was \$2,500.

The lower-middle group includes all the nonpoor whose income was under \$12,000 in 1972. The average income of lower-middle households

was about \$8,000. The upper-middle group includes those with incomes between \$12,000 and \$15,999 in 1972, and the well-off are those with incomes of \$16,000 or more. The average income of upper-middle households was \$14,000, and of the well-off, \$24,500. The poor, upper-middle and well-off each comprise about a fifth of all households: the lower-middle about two-fifths.

The Better Off You Are, The More Energy You Use

(Millions of Btu's per Household in 1972-1973)

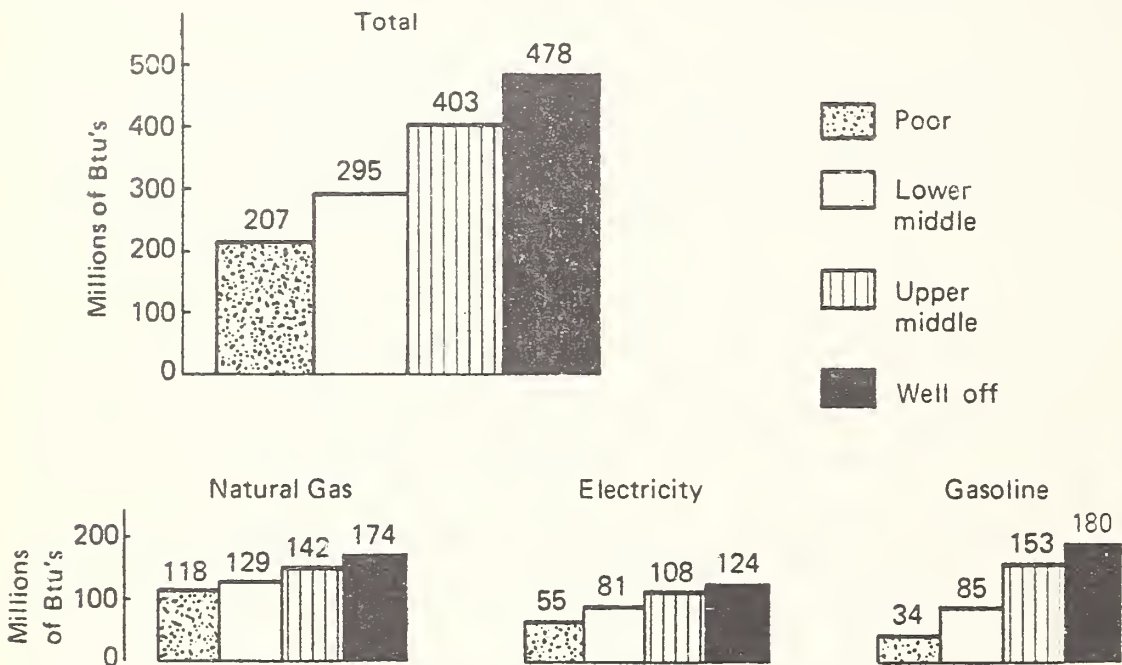


Figure 1

Source: Dorothy K. Newman and Dawn Day, *American Energy Consumer*, Cambridge, Mass., Ballinger Publishing Co., 1975. Figure 5-1, p. 88.

Data: Washington Center for Metropolitan Studies' Lifestyles and Energy Surveys.

TABLE 1.—TRENDS TOWARD SINGLE FAMILY HOMES, SELECTED YEARS, 1940-73

Year	Percent of households in—				Persons per household
	All homes	Single family	Apartment	Mobile homes	
1940.....	100	67	33	(1)	3.8
1950.....	100	66	33	1	3.4
1960.....	100	75	24	1	3.3
1970.....	100	69	28	3	3.1
1973.....	100	75	20	4	3.0

¹ Less than 0.5 percent.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co. 1975. Table 3-8, p. 41. Prepared as follows: Housing: U.S. Bureau of the Census, Censuses of Housing 1970, 1960, 1950, and 1940. 1970: "General Housing Characteristics," Final Report HC(1)-A1, U.S. Summary, Table 3, p. 16. 1960: Vol. 1, "States and Small Areas," U.S. summary, final report, HC(1)-1, table 5, p. 16. 1950: Vol. 1, "General Characteristics," ch. 1, U.S. summary, table 5, p. 3. 1940: Vol. 2, pt. 1, "General Characteristics," U.S. summary, pp. 9-10. "Persons per household: U.S. Bureau of Census, Statistical Abstract of the United States, 1973," tables 2, 49, and 1167, pp. 5, 39 and 689. 1973 data: Washington Center for Metropolitan Studies' Lifestyles and Energy Surveys.

TABLE 2.—CHANGE IN KEY ENERGY USING CHARACTERISTICS OF NEW 1-FAMILY HOUSES STARTED, 1966-71
AND 1971-73

Energy-using characteristic	1966-71 ¹	1971-73 ²
All new 1-family houses.....	33	-5
Heating fuel used:		
Electricity.....	99	34
Gas.....	19	-24
Oil.....	-6	55
Central air-conditioning installed.....	93	19
Foundation:		
Basement.....	4	7
Slab.....	81	-7
Crawl space.....	15	-17
Median square feet of floor space.....	-4	9

¹ Includes all new 1-family homes sold and contractor-built, owner-built, and rental houses started.

² Includes all new 1-family homes sold.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co. 1975. Tables 3-9 and 3-11, pp. 42 and 44. Prepared as follows: 1966-71 data: U.S. Bureau of the Census, construction reports—series C-25, "Characteristics of New One-family Homes," 1971, tables 6, 10, 16, and 17, pp. 35, 52-57, and 91-104. 1971-73 data: U.S. Department of Commerce and U.S. Department of Housing and Urban Development. "Sales of New One-Family Homes Total 620,000 in 1973." Press release dated June 10, 1974, and U.S. Bureau of Census, construction reports—series C-25 "Characteristics of New One-Family Homes, 1971."

TABLE 3.—ANNUAL COST VERSUS SAVINGS FOR INSTALLING ONE STORM WINDOW, FIVE SELECTED CITIES, DECEMBER 1973¹

Years	Atlanta				Boston				Chicago				Dallas				New York			
	Natural gas cost savings				Natural gas cost savings				Natural gas cost savings				Natural gas cost savings				Natural gas cost savings			
	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only	Storm window cost	Heating and air-conditioning only
1	\$23.95	\$1.92	\$1.58	\$5.24	\$30.63	\$5.12	\$32.45	\$3.14	\$23.99	\$1.52	\$32.70	\$4.38	\$32.70	\$1.00	\$32.70	\$4.38	\$32.70	\$1.00	\$32.70	\$4.38
2	25.27	3.95	3.25	10.77	32.31	10.52	34.23	6.37	25.31	3.12	34.50	9.00	34.50	2.06	34.50	9.00	34.50	2.06	34.50	9.00
3	26.66	6.09	5.01	16.60	34.09	16.22	36.11	9.82	26.70	4.81	36.40	13.88	36.40	3.17	36.40	13.88	36.40	3.17	36.40	13.88
4	28.13	8.34	6.87	22.75	35.96	22.23	38.10	13.46	28.17	6.59	38.40	19.02	38.40	4.34	38.40	19.02	38.40	4.34	38.40	19.02
5	29.68	10.72	8.83	29.24	37.94	28.57	40.20	17.30	29.72	8.47	40.51	24.45	40.51	5.58	40.51	24.45	40.51	5.58	40.51	24.45
6	31.31	13.23	10.90	36.09	40.03	35.26	42.41	21.35	31.35	10.46	42.74	30.17	42.74	6.89	42.74	30.17	42.74	6.89	42.74	30.17
7	33.03	15.88	13.08	43.31	42.23	42.32	44.74	25.62	33.07	12.56	45.07	36.21	45.07	8.27	45.07	36.21	45.07	8.27	45.07	36.21
8	34.85	18.68	15.38	50.93	44.55	49.77	47.20	30.13	34.89	14.77	47.57	42.58	47.57	9.72	47.57	42.58	47.57	9.72	47.57	42.58
9	36.77	21.62	17.81	58.97	47.00	57.63	49.80	34.89	36.81	17.10	50.19	49.30	50.19	11.25	50.19	49.30	50.19	11.25	50.19	49.30
10	38.79	24.73	20.37	67.45	49.59	65.92	52.54	39.91	38.83	19.56	52.95	56.39	52.95	12.87	52.95	56.39	52.95	12.87	52.95	56.39
11	40.92	28.01	23.07	76.40	52.32	74.67	55.43	45.21	40.97	22.16	55.86	63.87	55.86	14.58	55.86	63.87	55.86	14.58	55.86	63.87
12	43.17	31.47	25.92	85.84	55.20	83.90	58.48	50.80	43.22	24.90	58.93	71.76	58.93	16.38	58.93	71.76	58.93	16.38	58.93	71.76
13	45.54	35.12	28.93	95.80	58.24	93.63	61.70	56.69	45.60	27.79	62.17	80.09	62.17	18.28	62.17	80.09	62.17	18.28	62.17	80.09
14	48.04	38.97	32.10	106.31	61.44	103.90	65.09	62.91	48.11	30.84	65.59	88.87	65.59	20.29	65.59	88.87	65.59	20.29	65.59	88.87
15	50.68	43.03	35.45	117.40	64.82	114.73	68.67	72.60	50.76	34.06	69.20	98.14	69.20	22.41	69.20	98.14	69.20	22.41	69.20	98.14
16	53.47	47.32	38.98	129.10	68.39	126.16	72.45	76.39	53.55	37.45	73.01	107.92	73.01	24.64	73.01	107.92	73.01	24.64	73.01	107.92
17	56.41	51.84	42.70	141.44	72.15	138.22	76.43	83.69	56.60	41.03	77.03	118.24	77.03	27.00	77.03	118.24	77.03	27.00	77.03	118.24
18	59.51	56.61	46.63	154.46	76.12	150.94	80.63	95.51	59.61	44.81	81.27	129.12	81.27	29.49	81.27	129.12	81.27	29.49	81.27	129.12
19	62.78	61.64	50.77	168.20	80.31	164.36	85.00	104.00	62.89	48.79	85.74	140.60	85.74	32.11	85.74	140.60	85.74	32.11	85.74	140.60
20 ²	66.23	66.95	55.14	182.69	84.73	178.52	89.74	108.09	66.35	52.99	90.46	152.71	90.46	34.88	90.46	152.71	90.46	34.88	90.46	152.71

¹ December 1973 prices were used for storm windows and natural gas.² Not computed after 20 years.³ The year when the storm window pays for itself.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Table 3-12, p. 46. Derived using the following method: Each storm

window is assumed to be 15 ft², the usual size of a double-hung window. Storm-window prices are for medium-priced aluminum sash sold at retail, and installed in each of the cities by Sears, Roebuck & Co. Natural gas prices are as of December 1973, from the U.S. Bureau of Labor Statistics. Storm window costs and energy cost savings are computed assuming a 5.5 percent interest rate, compounded annually.

TABLE 4.—*Btu's saved per storm window, five cities, 1972*

City:	<i>Btu's</i> (millions)
Atlanta	1.7
Boston	2.6
Chicago	2.7
Dallas	1.7
New York	2.3

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Table 3-13, p. 47.

Estimates based on data from the U.S. National Bureau of Standards and the National Oceanic and Atmospheric Administration. The "air change" methodology used in the estimates was supplied by Stanley Glenn, Chairman of the ASHRAE Technical Committee 4.5.

TABLE 5.—INDOOR TEMPERATURE CONTROL AND PREFERENCE IN WINTER, BY HEATING DEGREE DAYS, 1973
[Percent of households]

Winter indoor temperature characteristics	Heating degree days ¹			
	All households	Less than 3,500	3,500 to 5,499	5,500 plus
All households.....	100	100	100	100
With thermostat or valve.....	81	70	86	87
Temperature during day: ²				
Under 70°.....	12	12	14	10
70° to 72°.....	52	51	51	56
73° or higher.....	33	34	33	33
Don't know.....	2	4	2	2
Temperature at night: ²				
Under 70°.....	45	51	49	38
70° to 72°.....	35	30	33	41
73° or higher.....	16	13	15	19
Don't know.....	4	7	3	2

¹ Heating degree days is defined as the number of degrees the daily average temperature is below 65°F.

² For households with thermostats or valves.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Table 3-14, p. 48. Data: Washington Center for Metropolitan Studies' Lifestyles and Energy Surveys.

TABLE 6.—ANNUAL ENERGY REQUIREMENTS OF SMALL ELECTRIC HOUSEHOLD APPLIANCES, 1973

Appliance	Average wattage	Estimated kilowatt-hours consumed annually	Appliance	Average wattage	Estimated kilowatt-hours consumed annually
Food preparation:			Comfort conditioning—Cont.		
Blender.....	386	15	Fan (rollaway).....	171	138
Broiler.....	1,436	100	Fan (window).....	200	170
Carving knife.....	92	8	Heater (portable).....	1,322	176
Coffee maker.....	894	106	Heating pad.....	65	10
Deep fryer.....	1,448	83	Humidifier.....	177	163
Dishwasher.....	1,201	363	Health and beauty:		
Egg cooker.....	516	14	Germicidal lamp.....	20	141
Frying pan.....	1,196	186	Hair dryer.....	381	14
Hot plate.....	1,257	90	Heat lamp (infrared).....	250	13
Mixer.....	127	13	Shaver.....	14	2
Oven (microwave only).....	1,450	190	Sun lamp.....	279	16
Roaster.....	1,333	205	Tooth brush.....	7	0.5
Sandwich grill.....	1,161	33	Vibrator.....	40	2
Toaster.....	1,146	39	Home entertainment:		
Trash compactor.....	400	50	Radio.....	71	86
Waffle iron.....	1,116	22	Radio/record player.....	109	109
Waste disposer.....	445	30	Housewares:		
Comfort conditioning:			Clock.....	2	17
Air cleaner.....	50	216	Floor polisher.....	305	15
Bed covering.....	177	147	Sewing machine.....	75	11
Dehumidifier.....	257	377	Vacuum cleaner.....	630	46
Fan (attic).....	370	291	Iron (hand).....	1,008	144
Fan (circulating).....	88	43			

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Table 3-25, p. 56. Data: Electric Energy Association, "Annual Energy Requirements of Electric Household Appliances," New York, 1973 (pamphlet).

TABLE 7.—PERCENT OF HOUSEHOLDS WITH SELECTED APPLIANCES, BY TYPE OF APPLIANCE AND INCOME CLASS, 1972-73

[Percent¹]

Appliance	All households	Poor	Lower middle	Upper middle	Well off
Refrigerator.....	100	98	100	100	100
Manual defrost.....	48	74	51	39	30
Frost-free.....	51	24	48	60	69
Clothes washer.....	78	62	73	89	91
Wringer.....	10	18	9	5	1
Automatic.....	70	44	64	84	90
Television-all.....	97	94	96	98	98
Color.....	53	27	48	63	74
Dishwasher.....	25	3	13	39	55
Clothes dryer.....	53	24	45	70	80
Freezer.....	23	23	30	38	47
Air-conditioning.....	47	22	45	58	64
Window.....	32	18	34	39	33
Central.....	15	4	10	19	32
In area with less than 1,000 cooling degree days ²	33	9	27	42	51

¹ Details may not add to totals because of rounding or presence of more than type of an appliance.² Cooling degree days is the number of degrees the daily average temperature is above 65° F. The cooling degree days used were for the summer of 1972.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Tables 3-26, 3-27, 5-10 and 5-12, pp. 57, 58, 95 and 101. Data: Washington Center for Metropolitan Studies' Lifestyles and Energy Surveys.

TABLE 8.—CLIMATE AND HOUSING CHARACTERISTICS, BY INCOME, 1973 (PERCENT OF HOUSEHOLDS)

Climate and structural characteristics	Poor	Lower middle	Upper middle	Well off
All households.....	100	100	100	100
Climate under 3,500 heating degree days.....	41	33	29	25
Apartment.....	32	26	13	8
Less than 5 rooms.....	47	35	18	8
Living room less than 200 ft ²	62	55	36	29
Less than 15 windows.....	82	73	67	45
No picture window.....	70	56	38	29
Some storm windows.....	31	49	54	63
Protected doors* †.....	41	53	58	70
Basement in single-family homes.....	31	45	52	61
Insulation in single-family homes†.....	41	78	86	94

*Includes entrances with storm doors and doors opening on to apartment hallways and other heated areas.

†Excludes unknowns.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Table 5-5, p. 94. Data: Washington Center for Metropolitan Studies' Lifestyles and Energy Surveys.

TABLE 9.—PERCENT OF HOUSEHOLDS, BY NUMBER OF CARS OWNED, AND BY INCOME,¹ 1960 AND 1973

Income and car ownership	1960	1973
Poor	100	100
No car	65	47
1 car	32	37
2 or more	3	16
Lower middle	100	100
No car	26	16
1 car	64	52
2 or more	9	32
Upper middle	100	100
No car	8	4
1 car	72	35
2 or more	20	61
Well off	100	100
No car	5	1
1 car	56	21
2 or more	39	78

¹ For 1973 the income groups are defined as in other parts of this study. For 1960 the group defined as poor is the lowest 5th of the income distribution and the lower middle is defined as the 2d and 3d 5ths; the upper middle and well off are the 4th and highest 5ths respectively.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975 Table 5-14, p. 103. Prepared as follows: U.S. Bureau of the Census, "Current Population Reports," series P-65, No. 18, Aug. 11, 1967, "Special Report on Household Ownership and Purchase of Automobiles and Selected Household Durables: 1960-1967," table 1, p. 5 and 1973 Washington Center for Metropolitan Studies' Lifestyles and Energy Surveys.

TABLE 10.—CARS, DRIVERS, RESIDENTIAL LOCATION, AND CAR MILEAGE BY INCOME, 1972-73

Cars, drivers, location, and mileage	Poor	Lower middle	Upper middle	Well off
All households ¹	100	100	100	100
Cars ¹ :				
No car	47	16	4	1
1	37	52	35	21
2	14	25	51	58
3 or more	2	7	10	21
Drivers ¹ :				
None	34	12	2	1
1	43	39	13	7
2 or more	23	50	85	92
Drivers all household with cars ¹ :				
None	1	1	(1)	1
1	57	41	11	7
2 or more	41	58	89	92
Residential location ¹ :				
Inside metro area	56	68	71	82
Central city	39	39	24	24
Ring	17	29	47	58
Outside metro area	44	32	29	18
Miles driven in past year: ²				
Less than 10,000	64	39	15	12
10,000 to 14,999	17	27	18	15
15,000 or over	20	35	67	72
Miles driven in past year (median miles)	8,000	12,000	18,000	20,000

¹ Percent.

² Less than 0.5 percent.

³ For all cars owned 12 mo or more and for which mileage was reported.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Table 5-18, p. 107. Data: Washington Center for Metropolitan Studies' Lifestyles and Energy Surveys.

TABLE 11.—ENERGY CONSUMPTION IN THE UNITED STATES, SELECTED YEARS, 1920-73

Year	Total U.S. energy consumption ¹ (trillions of Btu's)	Per capita U.S. energy consumption (millions of Btu's)
1920	19,768	185.7
1930	22,253	180.6
1940	23,877	180.1
1950	33,992	223.2
1960	44,569	246.7
1970	67,143	327.7
1971	68,698	331.8
1972	72,108	345.3
1973 ²	75,561	359.1

¹ Includes coal, petroleum and natural gas and primary electricity. Firewood, animal wastes and most other non-commercial fuels are excluded.

² Preliminary.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Table 1-5, p. 7. Data: Energy policy project of the Ford Foundation, exploring energy choices: A preliminary report, Washington, D.C.: Energy policy project, 1974, table 1, p. 74.

TABLE 12.—POLICIES FAVORED TO PREVENT A HYPOTHETICAL ELECTRICITY SHORTAGE OVER THE NEXT DECADE,
BY INCOME, 1973

[Percent of households]

Policies favored	Total	Poor	Lower middle	Upper middle	Well off
All households ¹	100	100	100	100	100
Increase supply	45	41	45	39	52
Be more thrifty	50	48	50	54	47
Slow population growth	9	5	8	11	11
Increase price	2	3	1	1	4
Other and no answer	4	7	4	3	2

¹ Do not add because some respondents gave more than 1 answer.

Source: Dorothy K. Newman and Dawn Day, "American Energy Consumer," Cambridge, Mass., Ballinger Publishing Co., 1975. Table 5-26. p. 115. Data: Washington Center for Metropolitan Studies' Lifestyles and Energy Surveys.

THE DEPARTMENT OF COMMERCE ENERGY LABELING AND ENERGY EFFICIENCY PROGRAMS FOR HOUSE- HOLD APPLIANCES

[By Bernard J. McGuire, Jr., Appliance Labeling Section, National Bureau of Standards, U.S. Department of Commerce]

Because the causes and effects of the Nation's energy problem are many and complex, the Federal response to this problem has taken many forms. Some of the Federal programs deal with the combined technological, economic, and political problems associated with finding or locating new energy supplies or sources, while others are concerned with the conservation of energy now available. In this latter group are two Department of Commerce programs that are of particular interest to consumers.

Though the primary purpose of the Department of Commerce Energy Labeling Program and Energy Efficiency Program is to conserve energy, these programs also often have the very fortunate effect, for consumers, of reducing the cost of household operation. That, of course, causes the programs to be of great interest to the public, and also brings them within the scope of today's symposium.

Here is how the two programs came into being, and where they stand today.

ENERGY LABELING PROGRAM

In April 1973, the President directed that a voluntary energy labeling program be developed for energy-intensive household appliances and equipment. The labels were to provide data on energy usage as well as a rating comparing the product's efficiency with that of competing products.

Formalized procedures for the new program were developed and were issued in October 1973 as part of the Code of Federal Regulations (15 CFR Part 9). The stated goal of the program was to encourage manufacturers to provide consumers, at the point of sale, with information on the energy consumption and energy efficiency of household appliances and equipment. The appliances and equipment covered were room and central air conditioning, refrigerators and freezers, clothes washers and dryers, dishwashers, ranges and ovens, water heaters, and comfort heating equipment. Television receivers have since been added to the list.

For the purposes of the program, the term "manufacturers" has been interpreted as including actual manufacturers or assemblers, private brand labelers, and importers of the appliances and equipment covered.

The Department of Commerce's role in the labeling program is performed primarily by the Appliance Labeling Section of the National

Bureau of Standards. Program activities include providing operating guidelines and technical information, maintaining program records, monitoring manufacturer participation, and conducting a program-related consumer information program.

In the Appliance Labeling Section, we handle the various product categories on an individual basis. For each category, our approach is to first examine existing standards and test methods, and talk to standards-writing groups, to determine whether appropriate test methods exist. We then develop a general approach to the testing and rating of products in that category, and hold a series of meetings with representatives of manufacturers, trade associations, retailers, consumers, and interested Government agencies. Utilizing the input derived from our own studies and from these meetings, we develop a *proposed labeling specification* and publish it in the *Federal Register* for public comment. Each labeling specification is intended to identify or define test methods, label designs, rules, and limitations associated with the labeling of products in the given category by manufacturers.

When the public comment period is over, we revise the labeling specification to reflect the comments and suggestions received from the public. We then issue the *final labeling specification*, and interested manufacturers can then participate in the labeling program with respect to that category of products.

To participate in the program, manufacturers must agree to observe certain testing, reporting, labeling, and advertising requirements. Manufacturers are responsible for testing, rating, and labeling their own products.

Our monitoring of participants' activities is based primarily on the evaluation of complaints received from competitors and consumers. In responding to complaints we have access to manufacturers' test data, and we may also require them to retest models with questionable ratings. We have not yet encountered any problems related to improper rating or labeling, but if we do ever encounter such problems, we can expel deliberate offenders from the program. Since this would necessarily be attended by some bad publicity for the participant, we believe that it comprises an effective deterrent to program abuse.

In developing labeling specifications, our most difficult engineering problems are related to the selection, revision, or development of test methods that will enable us to measure in the laboratory some aspect of a product's energy usage or energy efficiency that can be directly correlated with its energy usage or efficiency in actual home use. To do this we must have a good understanding of how each product functions, how it is used in homes, and what type of product test program can reasonably be required of manufacturers. We have been fortunate in receiving a high degree of cooperation from manufacturers and trade associations in attacking these problems.

Our most difficult non-engineering problems are in the development of rating schemes that will convey to consumers an understanding of the energy usage of one model with respect to another. We do know that in the general case consumers prefer to have energy usage information stated in terms of energy cost. However, for some products, such as room air conditioners, there are so many variables involved in home usage that rating by cost of energy could be misleading to consumers. Also, there are some products, such as ranges, for which we cannot yet define typical home usage. We have had to conduct a num-

ber of consumer surveys in our attempts to develop useful and meaningful rating schemes.

ROOM AIR CONDITIONERS

The first labeling specification we developed under the program was for room air conditioners. It became effective in May 1974. Since that time twenty-five manufacturers, representing a volume of ninety-five percent of all room air conditioners sold in the United States, have become participants in the program. The label design used on these products is as shown in Figure 1.

For room air conditioners, we found that the variations that exist in climate, consumer use patterns, and utility rates combined to make it impractical to label by cost of energy. However, results of consumer surveys indicated to us that the Energy Efficiency Ratio (EER) concept was understandable and useful to consumers. After much discussion and investigation of a large number of rating schemes, we adopted the EER scheme. We also found that correct sizing of room air conditioners was important to consumers from the standpoint of both energy usage and comfort. This problem was too complex to handle on the label, so we produced a pamphlet, available in both English and Spanish, to help consumers select the correct size of unit, and referred to the pamphlet on the label. The pamphlet also shows consumers how to estimate their own cost of operation for various room air conditioner models, and how to balance cost of operation differences against differences in the selling price of different models.

Note that on the room air conditioner label the range of EER's, for all available models having about the same cooling capacity as the labeled model, is shown in the box. We consider this to be an extremely important feature of our labels because it indicates to consumers the relative efficiency of the model they are looking at. Thus, they can determine relative efficiency without shopping in many stores.

REFRIGERATORS AND FREEZERS

The second, third, and fourth labeling specifications we developed under the program were for refrigerators, combination refrigerator-freezers, and freezers. The final labeling specifications were published in August 1975, but because of a difference of opinion concerning the form of the energy label that developed within the industry, we elected to revise the "final" specifications. We now expect the revised labeling specifications to become effective in December 1975. When the specifications become effective, indications are that most manufacturers will start using the labels.

Labels for these three product categories vary slightly in design, depending on what category a given model is in and whether it has a switch for consumer control of anti-sweat heaters. Anti-sweat heaters are small heating devices built into the walls of a refrigerator or freezer to prevent the accumulation of outside condensation in humid weather.

As indicated in the label for combination refrigerator-freezers shown in Figure 2, we found that for these appliances consumer usage fell into a fairly consistent pattern and a reasonably realistic cost of energy figure could be shown. Variations in utility rates are handled

by means of the table in the lower left corner of the label. When a model is equipped with an anti-sweat heater switch, two sets of energy costs are shown. Separate cost of energy ranges are shown on the label for models having automatic defrost systems, and models having semi-automatic defrost systems. If models having manual defrost systems were available in this size range, a separate cost of energy range would also be shown for them.

WATER HEATERS

The labeling specification for gas-fueled and electric water heaters has been published in proposed form, and the final labeling specification should be issued by April 1976. In order to develop this labeling specification, we had to work closely with standards-writing groups to develop a common test method for water heaters using the two different energy sources. The existing electric water heater test method had been different from the gas-fueled water heater test method.

We also developed a new method of specifying the size of water heaters, based on a maximum one-hour delivery of hot water, to help consumers in determining the correct size of water heater to buy.

In order to establish a cost of energy rating scheme for water heaters, we had to make a determination of the amount of hot water typically used in residences. This proved to be difficult, but we were able to locate enough information from small surveys made by various utility companies to make a reasonable estimate. For a family of four, it appears that average hot water usage is about 450 gallons per week.

The water heater label shown in Figure 3 is from the proposed labeling specification. The final label design will be similar to the one shown, though it will differ in some details. Note that on these labels we were able to provide a brief guide by which consumers may estimate the hot water supply rating that a water heater should have to meet their needs. The method for selecting a water heater will be more fully detailed in a pamphlet that will be made available to consumers.

The cost of energy rating shown on the labels is calculated on the basis of a hot water usage rate of 450 gallons per week. The range of cost of energy ratings for water heaters having similar hot water supply ratings is also shown.

OTHER APPLIANCES

We are now working actively on the development of labeling specifications for the other appliances and equipment covered by the program. Our current expectation is that we will have all the labeling specifications published, at least in proposed form, by the end of 1976. Of course, we do not know what complications or delays may develop during this time, so it is difficult to say when all the labels will be in use in stores. Hopefully, most major appliances will carry energy labels by the end of 1977.

ENERGY EFFICIENCY PROGRAM

The Department of Commerce Energy Efficiency Program is, from the engineering standpoint, more complex than the Energy Labeling Program. However, the operation of the program does not directly involve consumers, so the non-engineering aspects of the program are relatively simple.

In January 1975, the President directed that a voluntary energy efficiency program be developed for energy-intensive household appliances. The appliances covered were to be the same ones covered in the energy labeling program, but central air conditioning and heating equipment were not to be included. The President's directive indicated that the program was to be based on manufacturer's voluntary efforts to reduce by an average of twenty percent the energy usage of new appliances relative to their output. The goal was to be achieved by 1980 and the base year, or year from which the energy reduction was to be calculated, was 1972. The President also stated that if manufacturers would not agree to support this voluntary program, he would ask Congress to mandate a program.

We published a notice of the program and a request for suggestions on how such a program might be organized in the *Federal Register*. We also held a series of meetings at which various program concepts were discussed with segments of the appliance industry. After fully considering all of the comments and suggestions received, we prepared and published for public comment thirteen separate *proposed efficiency programs*, each covering one product category. We have received further comments and are now preparing the *final efficiency programs*. The test methods we are specifying for use in the energy efficiency programs are, except for some minor differences, those used in the energy labeling program.

Our most difficult problem in developing these programs has been the establishment of reasonable, equitable, and economically feasible energy reduction goals for the various appliance categories. To do this we have had to make an intensive study of the economic and technical feasibility of various improvements that could be made in appliances and we have had to pay close attention to evidence presented to us by various manufacturers concerning possible improvements. It has been a very complex process.

The goals we arrived at are based on average reductions in energy usage by various product categories, with the averages being calculated on an industry-wide basis. Any energy reductions count, whether they are achieved by improvements in operating efficiency, removal of energy consuming features, changes in thermostat settings or other adjustments that will cause consumers to utilize the products in a more energy-efficient way, or even by changes in the proportions of highly efficient and less efficient models marketed.

The energy reduction goals are :

<i>Appliance category</i>	<i>Energy use reduction (percent)</i>
Water heaters, electric_____	9
Water heaters, gas_____	25
Refrigerator-freezers _____	30
Freezers _____	25
Ranges, electric_____	10
Ranges, gas_____	30
Television receivers, monochrome_____	48
Television receivers, color_____	42
Room air conditioners_____	22
Clothes dryers, electric_____	6
Clothes dryers, gas_____	12
Clothes washers_____	*10
Dishwashers _____	*18

*Includes energy used to heat water.

The operation of the efficiency programs depends entirely on voluntary agreement by manufacturers to try to achieve the established goals. And, even though we have not yet published the final programs, all major manufacturers (manufacturers having at least five percent of the market in at least one product category) have agreed to try to meet the goals. Though some of the agreements have been provisional, depending on the details of the final programs, it appears that we are going to get excellent cooperation in the future, just as we have up to the present.

Consumers in general will benefit from these energy efficiency programs, but they may not know the extent of their savings because they are not directly involved in program operation. However, since most major manufacturers will probably participate in both the energy efficiency and the energy labeling programs, consumers will be able to know what the energy costs will be for appliances they buy.

PENDING LEGISLATION

Though it appears that the Department of Commerce voluntary programs are going to be successful in diminishing the trend toward greater residential energy use, there are many people who feel that the programs should be mandatory. Mandatory programs would require that all manufacturers, regardless of size or sales volume, participate. Mandatory programs would also be able to preempt state and local programs, some of which are being developed at this time. The state and local programs, because of their diversity, have the potential for causing confusion among both consumers and manufacturers.

Bills mandating nationwide labeling programs have been passed by both the Senate and the House of Representatives. In both bills the mandated programs are patterned to some extent after the Department of Commerce programs. Differences between the bills are now being resolved in joint conference; this process may be completed at any time. If such legislation is passed by Congress, it is probable that the National Bureau of Standards will continue to perform the required technical activities.

energy guide

ASDF Corp.

Model 5508A10

8,000 Btu per hour
(cooling capacity)

115 volts

860 watts

7.5 amperes

EER=9.3

Energy Efficiency Ratio expressed in Btu per watt-hour

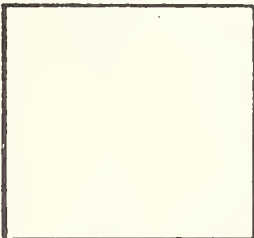
IMPORTANT... for units with the same cooling capacity, higher EER means:
Lower energy consumption
Lower cost to use!

For available 7,500 to 8,500 Btu per hour 115 volt window models the EER range is

EER 5.4 to EER 9.9

For information on cost of operation and selection of correct cooling capacity, ask your dealer for NBS Publication LC 1053 or write to National Bureau of Standards, 411.00, Washington, D.C. 20234

Data on this label
for this unit certified by



Tested in accordance with



FIGURE 1.—Sample room air conditioner label.

Energy Guide

Data on this label for this unit certified by

Cost of Energy \$6.30 per month

This cost is based on use under standard test conditions and an electric rate of 4¢ per kilowatt-hour (kWh).

The cost of energy will vary with how you use your unit and with your electric rate. For tips on saving energy ask your dealer for NBS Publication LC 1055 or write to National Bureau of Standards, 441.00, Washington, D.C. 20234.

To estimate your cost at your local rate use the table below.

<i>If your</i>	2¢	<i>Your monthly cost</i>	\$ 3.20
<i>electric rate</i>	4¢		\$ 6.30
<i>per kWh is</i>	6¢	<i>of energy will</i>	\$ 9.50
	8¢	<i>be approximately</i>	\$12.60
	10¢		\$15.80

ASDF Corp Model 77A
16.0 Cubic Foot Automatic Defrost
Combination Refrigerator-Freezer

Comparison Information

The ranges of cost of energy for all brands of 14.5 to 17.5 cubic foot refrigerator-freezers with various defrost systems for which information is available are given below.

Type of Defrost	Approximate Cost of Energy per month at a rate of 4¢ per kWh
Automatic	\$4.20 to \$7.20
Partial Automatic	\$3.50 to \$5.90

Energy Consumption 158 kilowatt-hours per month

Under standard test conditions.

FIGURE 2.—Sample combination refrigerator-freezer label (front).

Energy Guide

Data on this label for this unit certified by:

ASDF Corp.
Model No. 3752 E-50
Tank Capacity 50 Gallons
Electric Water Heater

Cost of Energy
\$247 per year

The cost of energy for similarly rated electric water heaters ranges from a low of \$225 per year to a high of \$283 per year.

These costs are for comparison purposes only and are based on Standard Test Conditions, using an electric rate of 4¢ per Kilowatt-hour (kWh). Your cost for energy depends on the amount of hot water you use, your local electric rate, and your climate.

For additional information ask your dealer for NBS Publication LC1058 "Household Water Heaters" or write to the National Bureau of Standards, 441.01, Washington, D.C. 20234.

How to Select a Water Heater for Energy Savings

From the table below, find your maximum hot water needs for 1 hour. Remember select only the "typical uses" for a 1-hour period for your family. Add only the gallons for that 1-hour period. **Don't overestimate.**

Typical Uses	Gallons per Use
Clothes Washer	21
Bath/Shower	15
Dishwasher	15
Hand Dishwashing	4
Food Preparation	3
Hand & Face Washing	2

Now you know your needed HOT WATER SUPPLY RATING. Select a water heater with a Hot Water Supply Rating that most nearly meets your needs and costs the least to operate.

Hot Water Supply Rating
55 Gallons per Hour

This water heater will supply up to 55 gallons of hot water in one hour.

IMPORTANT—If your electric service for water heating is timer controlled or otherwise restricted during certain hours by your electric company, the above information will not apply. Check with your electric company.

FIGURE 3.—Sample electric water heater label (front).

SELECTING AND CARING FOR EQUIPMENT AND FURNISHINGS TO EXTEND USEFUL LIFE

[By Glenda F. Pifer, Extension Service, USDA]

The consumer has a major role in energy conservation. The most obvious is that of adjusting the thermostat, turning off the unnecessary lights, using less hot water, etc. Perhaps a more important role is that of making shopping decisions that will cut down on home maintenance and reduce operational costs by the selection of more energy efficient appliances. This will prolong the useful life of home appliances and other home goods.

Poor selection, inefficient use, and poor care of appliances are a waste of energy and other finite resources. Today's consumers must adjust everyday living standards which affect the use of these resources. This will require changes in individual and family attitudes and values. No longer can the availability of money to make purchases be the sole basis for decisionmaking in the use of these finite resources.

Today's consumer must make decisions that will provide a balance in terms of resource costs, environmental costs and social costs. We can no longer have our cake and eat it too. Consumers have become so involved in the more obvious adjustments, many have not as yet recognized the need for, or accepted the responsibility of, this bigger and more important role they must assume.

Most household equipment is used to modify the living environment by heating, cooling, lighting, cleaning, providing sound, etc. Consumers need to evaluate their equipment needs and how they can most effectively meet these needs with a minimum cost in money and energy.

Needs and wants will vary according to:

1. Stage in the family life cycle. The single head of household or beginning family has needs different from those of a retired couple.
2. The individual's or family's resources, level of living, social status, and personal interests.
3. Location of the individual or family. Needs may be different for the family living in a rural area from those living in an urban area. The homeowner's needs may be somewhat different than those of a renter.
4. Availability of time and energy and their interest in performing household tasks. Built-in conveniences and automatic features may be desired if time and energy are limited.

Consumers can reduce household operational costs by making more discriminating decisions about the selection, use and care of house-

hold equipment, furnishings and the maintenance needed. To do this, consumers should:

1. Know their needs.
2. Know how much they can afford to spend. Consider initial cost and lifetime cost.
3. Be informed about the item being considered for purchase.
4. Do comparative shopping in several stores. Inspect the merchandise. Know the manufacturer, the performance that can be expected and warranty coverage.
5. Buy the quality best suited to the need. The frequency of use and length of time consumers expect to use a piece of equipment should determine the selection. Avoid appliances that have features which will not be needed or used. Additional features usually increase purchase costs, the possibility of mechanical problems, and service costs.
6. Know the store policies and procedures. Reliable businesses stand behind their merchandise and are fair in handling reasonable adjustments and complaints.
7. Purchase from the store which offers the merchandise, the services, and the price that best meet the need.

The consumer has the responsibility in the proper use and care of appliances to secure the best performance and longer life. Household activities may be shared by members of a household; thus the need for all who use the appliance to have a basic knowledge of how it operates, what it will do, and what its limitations are.

The time and energy required to launder the family's clothing and household linens can be reduced to a minimum if care required is one of the criteria considered when purchases are made. Easy care fabrics laundered with today's laundry appliances can greatly reduce time, energy and costs involved in keeping the family's clothing and household linens in good condition and prolong their useful life. The elimination of articles which must be laundered separately will reduce the number of times laundry equipment is used; thus saving the wear on equipment, cost of laundry supplies, water and the homemaker's time. The cost of clothing maintenance can be reduced if garments may be laundered rather than drycleaned. Drycleaning costs may be reduced when the do-it-yourself (coin) cleaners are used, and satisfactory results are obtained.

The choice of floor coverings in the home and the frequency in which they are used will determine the number of different pieces of equipment necessary and the amount of effort required for maintenance. Consumers should know and use the best tool for the task. Consumers also need to examine their methods and their efficiency in performing the task.

Food preparation and clean-up is the most frequently performed task in most households. There is an enormous number of appliances designed to make these tasks easier or to do a better job. The average household has several such pieces seldom used, if ever. A careful evaluation should be made when considering additional purchases if there already may be the appliance potential in the kitchen before succumbing to the advertisement for another. A few good versatile basic pieces may meet the needs, be less complicated to use, and more free from mechanical problems. It is questionable if sixteen speeds

on a blender is based on consumer needs or sales competition. Does the slow cooker do anything more than can be accomplished in cooking on the top of the range on low heat setting in a heavy gauge pan with a tight-fitting lid. Does it really make much difference if the can of peas is opened with a good manual can opener or an automatic one?

Consumers should use and care for appliances according to manufacturer's instructions. If, when used as recommended, the appliance does not fulfill the consumer's need, it is possible the consumer didn't make the right purchase. The consumer who wears out or burns out a low wattage hand mixer in a short period of time mixing cookie dough didn't buy the right piece of equipment for the need. The consumer who spends time and energy, and uses extra electricity to keep carpets and rugs in good condition didn't buy the most efficient equipment to meet the need.

It had been assumed that most people buy appliances to save time and energy, but in a recent study at Michigan State University, it was found that women who work outside the home and women who didn't owned the same appliances.

Another problem the consumer needs to face is when to repair an appliance or to replace it. Factors to consider are:

1. Cost of repairs. (Can I do it myself or must I have it done?)
2. Time required for repairs.
3. Is the appliance essential to the well-being of the family?
4. Inconvenience, while you are doing without it.
5. Your resources. (Is cash or credit available to purchase a new one?)
6. Operational costs.
7. Have new models been greatly improved?
8. Do new models operate on less energy?
9. Will you likely have a need for this appliance for several more years?
10. Is it likely that there will be a great change in the purchase cost later?

The increasing cost of housing construction and energy are forcing housing units to be scaled down. As this trend continues, greater skill will be required to make decisions about furnishings and equipment that will meet family needs and the additional strain of families doing more activities in less space.

The selection of efficient appliances—and the effective use of those appliances—can contribute significantly to reducing the cost of household operation. And, these days, there are few, if any, consumers *not* interested in that!

PRIORITIES FOR USDA RESEARCH TO MEET FAMILY NEEDS

[By Elizabeth Y. Davis, Family and Consumer Services, Cooperative State Research Service, USDA]

I. Nature of research priorities

The term priority is easy to define but difficult to apply. It is often an individual work, depending upon the information available to the person and his own values.

Two categories of research priorities can be delineated. One category is the discipline-oriented group of priorities and the other is a public-oriented group.

Discipline-oriented priorities are ordinarily determined by the people in the discipline and therefore there are as many sub-categories as there are recognized disciplines or sub-disciplines. They emerge very largely from the minds of individual researchers, the scientists, and are expressed in journals, professional society meetings and in the yearly, or even more frequent requests for listings of priorities which filter down from administrators to scientists, frequently in a very limited time frame (Please give me your five research priorities for the next ten years by two o'clock this afternoon, double spaced on plain bond paper.) Probably there is agreement that such priorities are valid or that there is sufficient consensus on the importance of these to cause action.

Public-oriented priorities are determined largely by those who appropriate the money to support research, that is by Congress or State legislators. Through formal hearings, informal communications, committees of Congress and State legislation sufficient consensus is reached for appropriation bills to be passed. Again, even with disagreement, there is sufficient consensus to cause action.

A sub-category of public-oriented priorities are those which emerge from "consumer" or "user" groups. These groups often influence legislative decisions important to the research program and they may provide direct financial support.

II. Setting research priorities

Administrators in the Department of Agriculture and the State agricultural experiment stations together with administrators of the Extension Service have been involved with identifying research needs and establishing the importance of those needs for many years. In 1966 they published a National Program of Research for Agriculture, which included national goals for agricultural research, but the emphasis was tied closely to old priorities geared to production efficiency and "not enough to future needs geared to 'people' problems." At that time about 2% of the research dollars were allocated to problems of

people as individuals, as members of families and of communities. The 1966 report specifically recommended a permanent, on-going mechanism for coordinated planning of agricultural research. Therefore, setting of priorities for research has continued to be an exercise participated in by various groups of policy-makers and administrators at national, regional, State, and local levels. Many of those groups utilized the *National Program of Research for Agriculture* as a primary source from which to work. The discipline-oriented scientists have been key participants in the on-going system.

III. *Example of a priority process*

A. Background

The criticism leveled at the 1966 report that the future needs were not geared sufficiently to "people" problems—was strong in the thinking of the group charged with development just about a year ago of the *Conference on Research to Meet U.S. and World Needs*.

The approach to the development of research priorities by that group which I shall describe today is an example of directing attention toward a goal of great urgency.

The World Food Conference in Rome a year ago resolved that—

"All governments should accept the removal of the scourge of hunger and malnutrition, which at present affects many millions of human beings, as the objective of the international community as a whole, and accept the goal that within a decade no child will go to bed hungry, that no family will fear for its next day's bread, and that no human being's future capacities will be stunted by malnutrition".

The conference in Rome pinpointed and accentuated the critical need to provide adequate food for people in the United States and throughout the world.

This directed attention to the importance of research in all aspects of food supply and consumption. The capability of research to provide new technology for increasing productivity and efficiency of food supplies is well known. This capability, the inherent responsibility associated with it, and the growing food needs indicated as never before that resources available for research should be targeted on the most pressing food problem.

For these reasons the Department and the National Association of State Universities and Land-Grant Colleges proposed to hold a national conference on food research as a step in setting priority action. The purpose of the conference would be to identify research issues related to the capacity of the Nation to meet its domestic and international food needs. The actual results of the conference are now available in two volumes titled "Research to Meet U.S. and World Food Needs". Much of the process described today appears in one of the two volumes.

Following the Rome conference the Agricultural Research Policy Advisory Committee (ARPAC) which serves as an advisor to two branches of publicly supported agricultural research in the United States—USDA and the Land-Grant Universities and Colleges, through the National Association of the State Universities and Land-

Grant Colleges, was made responsible for developing the basis for cooperation in planning and implementing national regional and interstate research programs. To implement the conference, a committee, a core working group, was developed with representation from the three primary research agencies in the department of Agriculture—the Agricultural Research Service, the Cooperative State Research Service, and the Economic Research Service—and from the Land-Grant Institutions and the Office of the Secretary. Dr. M. L. Peterson, representing the Land-Grant Institutions, Department of Agronomy and Range Science, University of California-Davis served as chairman. Dr. Ned Bayley, staff assistant to the Assistant Secretary for Conservation, Research and Education and one representative from each of the three Services developed the conference. The committee mix included people from several disciplines—agronomy, animal science, science, economics, and human nutrition. Others joined the core working group as needed.

The outline of research priorities which evolved from the conference differs from the original outline prepared in the first few meetings of the committee.

During the first meeting of the working group a statement on the *needs of people* was written which said that the rightful needs of all people and nations include an adequate supply of healthful foods, clothing and shelter. The purpose of the study would be to identify those problems that limit the achievement of goals, to arrange these problems in priority, and propose the kinds of research approaches that can lead to solutions. This study would not be concerned with resources for research, the agencies that conduct research, or scientific personnel. Rather, its purpose is to provide policy guidelines and direction to all agricultural research efforts in the next decade.

Some of the problems which the committee attempted to overcome dealt with limitation of thinking “within our program”, “our current expenditures”, “our legislative mandate”. Efforts were to be concentrated on what research is needed? What do we need to know in order to achieve the goal of meeting U.S. and World Food Needs? Not, how do we allocate the funds we have.

It was appropriate that policy questions would focus first on peoples’ needs and the quality of living. Secondly, consideration would be given to the management of physical and natural resources to achieve these needs now and for future generations. Lastly, the study would address the problems of the various private and public agencies, through whose means, resources are converted to human needs.

These statements as such do not appear in the published report of the conference. However, the concepts were incorporated into many of the research needs that were identified.

B. The Technique

The process for arriving at the priorities was an adapted, modified Delphi technique. The 1939–45 World War, with its proliferation of scientific methods, gave planners a new kit of tools, such as electronic calculators, advanced mathematical techniques, and game theory. Technology forecasting techniques were early spin-offs from these methods. In the Delphi technique, developed at Rand Corporation by

Olaf Helmar, Norman Dalkey and their co-workers, the opinions of a panel of experts were utilized in ways designed to minimize personal persuasion and to make the most of convergence of views. In recent years the method had been extended to social, political and economic fields.

Opinions of over 1,000 individuals in three groups, scientists and extension personnel, administrators and policy makers at various levels, and consumer and ultimate users of research, were incorporated into the final decisions.

C. Steps of Organization

The core working group developed a comprehensive outline of researchable areas within three main divisions—(1) dealing with human needs, (2) organization of resources, and (3) management of resources. Nearly 50 areas and subareas were included in the three divisions within each area, a situation statement was written, covering world and U.S. situation and the state of the research, the objectives of the area, elements for achievement of objectives and sub-objectives and research needs for the elements.

Over 900 scientists and extension personnel throughout the U.S. received one or more of these statements. These scientists were requested to help prepare the materials for the Conference by considering the situation statement, objectives, elements and needs, revising as desired, and listing important problems in the area.

From the replies statements were revised to incorporate the scientist's input. These revised statements were mailed again to the scientists for additional review and listing of all proposed research problems in priority order. Input was received from over 700 people.

D. Preconference Review

A final synthesis of the situation statements was made and three volumes were printed for the Preconference Review scheduled at the National Agricultural Library in late May, 1975. Sixty persons attended the Preconference Review including those who would be serving as chairman or secretaries at the Conference in July, the Regional Directors of the State Agricultural Experiment Stations, the ARS assistant Administrators, a few key individuals from the Extension Service, Universities and the private sector and the Core Working Group.

The purpose of the Preconference Review was to review the background materials for the July Working Conference, to gain some experience in the organization and management of the work groups for the conference and to test research needs rating procedures within and between work groups. The Preconference Review was also a means of incorporating the opinions of administrators and policy makers.

Each person had three documents consisting of (1) the purpose of the preconference, the current world food situation, policy relating to food and the research capabilities of the country, both public and private; and (2) a resource and reference document describing the current situation in the 44 subject areas. This document was organized

similarly to document three and provided background for the research needs. The third document described specific research needs in the same 44 research areas in Document 2; the problems listed were those identified by the scientific community and organized under each subject area according to subobjectives. Individuals invited to the conference were asked to write specific comments and revisions on the documents prior to the conference. Document three was discussed in detail during the preconference review.

Work groups reviewed and discussed research needs within the various areas for which they had responsibility, and rated the research needs as to their importance. As the problems for each subject area were rated, the ratings were entered into the computer and a new list of research needs was prepared. Low priorities problems were thus eliminated. Presentation by group chairmen with their reasoning for priority topics listings culminated in a rating of all the high priority problems arising from the day's work by all members. These ratings were then again placed in the computer for future checking. The actual organization and procedures for the July Working Conference resulted from this May Preconference Review.

E. Working Conference

The Working Conference took place July 9, 10 and 11 in Kansas City, Missouri. One hundred sixty-seven delegates representing the wide ranging needs of those who use or are affected by research results related to food were present for the conference. Two hundred fifteen other participants including research, extension and university administrators, government administrators, individual researchers, farmers, representatives of agri-business, and others were present. Members of the public and press were invited. The first task of the Conference was to identify food-related problems requiring research. The second was to judge their relative importance.

The Conference did not attempt to suggest research approaches for solving the problems or to recommend funding or organizational changes.

The delegates were selected by a process to bring about a balanced presentation of groups and organizations with interest in food supply and consumption. The procedure was to (1) identify agencies or organizations with food interests that were national in character insofar as possible, (2) to achieve a balance among groups such as consumers, nutritionists, farmers and farm organizations, agricultural and food industries, marketing firms, conservation groups, labor unions, government agencies, international development organizations, scientists and others, (3) request that the organizations name their own delegates and (4) distribute delegates among the 16 work groups at the conference so that each included an appropriate representation of interest. This was an effort to broaden the background and interest of the members of the conference. Execution of these procedures was imperfect because of late cancellations and failures of some organizations to send delegates. Nevertheless the overall balance of delegate interests among work groups and in the conference was within reasonable limits. The distribution of the 167 delegates resulted in attendance of 12 delegates directly related to consumer needs, 7 on human re-

sources and rural development, 10 on international development, 11 on nutrition and food service, 4 food regulation, 33 food processing, and marketing 33, for example. In addition to delegates the other participants to the conference were given opportunity to suggest research needs and participate in the rating procedures. Evaluations by participants are reported separately in conference proceedings.

Delegates and participants in the conference were asked first to suggest and evaluate specific research needs or problems within the 49 research need areas listed by that time. Identifying and assigning priorities to individual problems requires technical judgment based on specialized knowledge. Therefore for this part of the conference delegates were divided according to their interest and expertise into 16 working groups. Each group was concerned with no more than 4 or 5 related areas and with identifying and evaluating the most pressing needs or problems within those areas. To help make their decisions delegates and other participants had at hand several sources of information (1) the detailed situation statements on the various research needs areas (2) a list of specific research needs or problems suggested by the more than 700 agricultural researchers, extension personnel and other scientists within the United States. These had also been reviewed intensively by the several delegates and scientists and administrators in the Preconference Review. These research needs statements were presented to the delegates and other participants. Background information on the world food situation in the U.S. and the U.S. Agricultural Establishment was also given to the delegates.

A list of up to 40 problems pertinent to a research area was developed in each of the 16 groups. Each group then rated each problem according to its importance for meeting the stated objective of the area. The delegate ratings permitted the problems to be ranked so that the top 20 could be included in the final report of the conference. A total of 1011 problems in 49 areas and subareas were selected. After the conference the most important 10% of the 1011 problems were selected by a procedure that considered both area rating and the relative rating within each area. As it turned out about 55% of the special needs as identified by the Conference delegates were very similar to those suggested in the first listing by the scientists.

The area ratings took place later in the conference when delegates and other participants rated the 89 need areas and subareas according to the importance each area had as a means of increasing domestic and world food supplies. The findings of the conference related to three broad categories (1) Human Needs for Food, (2) Organization of Resources to Provide Food and (3) Management of Resources to Provide Food.

Of the 101 most important problems 17 were in the category dealing with human needs.

The research need areas in the category of organization of resources to provide food had the highest average rating of the three categories. The areas that contributed to that high average were: human resources, social institutions, public policy, finance, international development, production inputs and services, production systems and marketing systems.

Sixty-six problems were in the third category dealing with natural resources, crop production and livestock.

The final publications listing specific research problems considered important within each of the research need areas list the 20 problems selected by the delegates to the conference from the up to 40 which each group developed.

In addition, the lists identify the recommendations of other participants at the Conference and of the scientists who made their suggestions prior to the conference. If all three groups placed the need in priority then it is so designated.

Logistically the July Conference was a "first of its kind" for the Department of Agriculture. Secretaries worked three shifts to type lists of research needs as each group prepared them. Computer programming made it possible to use scan sheets for voting on priorities within each area. As soon as the voting concluded, the scan sheets were taken to the computer center by car. Results of processing were phoned to the Conference center so that the next stage of typing could begin. A complete print-shop was set up in the Conference center next to the typing and analysis section. By 8 A.M. of the last day of the Conference the twenty most important research needs in each of the areas were given to each delegate and participant. The vote on the importance of research need areas and subareas was recorded that morning on scan sheets by all attending the Conference and before the close of the Conference the results of the voting were given each conference attendant. Hardcopy, that is, printed sheets of the results were available.

F. Evaluation

An evaluation of the process places several items in the "good" and several in the "not so good" groups.

The process did:

- (1) involve scientists knowledgeable in the fields
- (2) involve individuals charged with administering research programs
- (3) involve the consumers, the users of research
- (4) utilize a mechanism whereby results of the voting on priorities were available to attendants by the close of the Conference.

Critics of the priority process say that: (1) research needs important to an individual or group will drop out unless identified as important to a large number of voters, (2) the process is expensive and time consuming and (3) the results are similar to those scientists themselves may have identified anyway.

What is the next step?

In June, before the Working Conference convened, ARPAC appointed two committees to develop follow-up plans.

One committee is to ensure that the publicly-supported research systems are: fully appraised of the Conference results; systematically consider the products of the Conference in terms of applicability to and implications for current and future research progress; and to continue dialogue with delegates and other participants in the Conference.

The second committee is to establish an acceptable data base regarding on-going research as related to the priorities.

In January a team of eight people is to convene to screen the 101 research problem areas and make specific and detailed recommendations for action.

IV. *Relationship of priorities to program responsibilities*

Arriving at priorities is a constant process. There is need to continually purge the system of unneeded activities, to redirect research effort from low to high priority areas, minimize fragmentation of research effort, create a sense of urgency, focus the research effort so that the "right" resources can be brought to bear on the "right" problem at the "right" time, provide adequate evaluation, and disseminate the results of the work. The plans for the follow-up of the Working Conference are an effort to face such problems.

According to the Focus II, priority of programs within State Cooperative Extension Services is planned with a high degree of involvement of people at the local level to determine programs to meet local needs. Government officials at the local level are involved in appropriating an average of approximately 20% of the cost of support Extension work.

The policies and missions of State Land-Grant Universities and the intent of State legislatures affect program priorities for each State, and these are different from State to State. Extension personnel from the county level, up to the Federal Extension System are involved in this process.

Those of us who focus attention on human problems are very aware that these human problems are not isolated, discipline-oriented. If we have as an objective the improvement of the quality of life, we are involved in the constant process of arriving at priorities.

Extension personnel have responsibilities far beyond this step, however; they serve as the medium to convey the local and State priorities to the research scientists and administrators at all levels. Their sensitivity to the priorities is particularly important since they also serve as the medium to convey results of research to the users; their programs are based on the research results.

V. *Conclusion*

The results of the process of arriving at priorities which was described today strengthen the idea that any system should include a cross section of all the people involved, that the process should begin at the bottom and go up as well as be horizontal and that priorities developed by an elimination system rather than by addition to existing priorities have merit.

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DIETARY GUIDANCE FOR FOOD STAMP FAMILIES

[By Betty Peterkin, Consumer and Food Economics Institute]

Three of the four revised USDA family food plans—low-cost, moderate-cost, and liberal—were presented at the Outlook Conference last year (1) (2). The thrifty food plan (Table 1), which replaces the economy plan—the least expensive of the plans, was released in September 1975 (3). The thrifty plan will be used in the preparation of guidance materials for the many consumers and leaders who request information from the Department on how to economize on food. The estimated cost for the plan (Table 2) has been proposed as the basis for setting the coupon allotment for the Food Stamp Program to become effective in January 1976 (4).

Most families will find the cost for one of the four USDA plans for a family of their size and composition similar to the amount they spend for food at home. For example, in September 1975 a family of four with two elementary low-cost children spent about \$38 a week for the thrifty plan, \$50 for the low-cost plan, \$62 for the moderate-cost plan, and \$75 for the liberal plan. (See Table 2.)

The plans allow for the number of persons and the sex and age of persons in the family. To do this, each plan specifies amounts of foods of different types (food groups) that together will provide nutritious diets for men, women, and children of different ages and for pregnant and nursing women. These amounts of food groups can be totaled for persons of the sex and age of family members to determine the plan for any family.

Families following the plans may choose from the food groups those foods that they can afford, that they can store properly, that they know how to prepare, and that they enjoy eating. Foods within a food group are generally similar to each other in nutritive value. In some groups—meat, poultry and fish, for example—one food in the group may be used to replace another in a meal. Each group is of special importance for one or more nutrients or as a source of food energy. While several food groups may provide appreciable amounts of the same nutrient, the cost of providing the nutrient may differ considerably among groups. For example, foods in both the meat and bread groups provide iron; but a milligram of iron from the meat group costs much more than a milligram of iron from the bread group.

The 1974–75 food plans replace plans developed in 1964 (5). They take into account new information about nutritional needs, nutritive values of foods, food prices, and food consumption of families.

The Recommended Dietary Allowances (RDA) set by the National Academy of Sciences-National Research Council (NAS-NRC) in 1974 (6) were used as a basis for the nutritional goals for the new

plans. Allowances set in 1974 for protein and ascorbic acid for all sex-age categories are substantially lower than the 1964 allowances used in developing the earlier plans. Also, 1974 allowances for calcium, vitamin A value, riboflavin, and niacin for certain sex-age categories are lower than those set in 1964. On the other hand, thiamin allowances for all sex-age categories and iron allowances for some categories in 1974 are higher than those in 1964. Three of the nutrients for which allowances were set in 1974 but not in 1964—vitamin B₆, vitamin B₁₂, and magnesium—were considered in development of the new plans.

The nutritive values of some major types of foods have changed since 1964. For example, many ready-to-eat cereals are fortified with one-fourth or more of the RDA for many nutrients; enriched bread and flour have more thiamin, riboflavin, and niacin added than in 1964.

Shifts occurred in food prices between 1964 and 1974. Prices for most foods increased, but some increased more sharply than others. To account for shifts in the relative economy of foods, prices paid in 1965–66 by households in USDA's survey of household food consumption (7) were updated to 1974 levels for use in revising the plans.

The 1965–66 survey of household food consumption provided information for the first time on the food intake of individuals in the household (8). It also provided detailed information on the quantities and money value of food used (purchased, home-produced, or received as a gift or pay) by the total household (7). Data from this study were used to estimate the amounts of groups of foods used to prepare meals and snacks for men, women, and children of different ages in households using food at four levels of cost. These amounts of food groups made up the food consumption patterns used in developing the four new food plans. Food consumption of households that used food valued at or slightly above the desired cost of the plan was adopted as the basis for the food consumption patterns for the plan. Such food patterns are believed to represent a way of eating that would be palatable to households that might use the plan.

Computerized techniques were designed for developing the new food plans. A quadratic programming model was used to find the combination of food groups (food plan) that represents as little change from the food consumption pattern as required to meet the nutritional goals at a given cost. It is assumed in this model that conformity to existing food consumption patterns is one measure of palatability of a diet. Additional information about the model and the data used in developing the plans is available upon request from the Consumer and Food Economics Institute.¹

The thrifty food plan was developed using the same nutritional goals and the same procedures as the three more costly plans. It differs only in cost level and in the group of survey households used as the basis for food consumption patterns in its development.

Food Consumption Patterns and the RDA.—The food consumption patterns used in developing the thrifty food plan were based on survey data for persons in households with relatively low food costs.

¹ Consumer and Food Economics Institute, Agricultural Research Service, U.S. Department of Agriculture, Hyattsville, Md. 20782.

Foods in these patterns provided the RDA plus 5 percent for some nutrients, but not for others. (The RDA were increased by 5 percent in evaluating food patterns to allow for nutrient loss associated with the discard of a small amount of edible food as plate waste or because of spoilage and the like.) Patterns for all sex-age categories provided the RDA plus 5 percent for protein, vitamin A value, thiamin, riboflavin, niacin, vitamin B₁₂, and ascorbic acid, but patterns for the following categories were short in certain nutrients:

Nutrient :	Sex-age category
Calcium-----	Teenage girls ; women ; men, 55 years and older.
Iron-----	Infants ; children, 1-2 years ; teenage girls ; women, 20-54 years.
Vitamin B ₆ ² -----	Teenage girls ; women ; men, 55 years and older.
Magnesium ² -----	All, 12 years and older.

² Evaluation based on rough estimate of content of food making up food consumption patterns. Content of this nutrient in many foods in the patterns is not known.

Fat in consumption patterns of older teenage boys, of men, and of women 20-54 years of age provided more than 40 percent of food energy—the upper limit for fat allowed in the plans.

To meet nutritional goals within cost limitations for the thrifty plan, adjustments to consumption patterns were required. These adjustments involved the use of less meat, poultry, fish, and eggs and more dry beans, dry peas, and grain products. Food consumption patterns for the three more expensive plans also had nutritional shortcomings, for which adjustments to patterns were required in developing the plans (1).

Nutritional Quality of the Thrifty Plan.—The thrifty plan provides the RDA plus 5 to 10 percent for food energy and the RDA plus 5 percent or more for protein, calcium, iron, vitamin A value, thiamin, riboflavin, niacin, and ascorbic acid (Table 3.). Fat provides 30 to 39 percent of the food energy. Nutritive values for average selections of foods within food groups, as made by survey households with relatively low food costs, were assumed in evaluating the plan.

The higher iron enrichment level for bread and flour proposed by the Food and Drug Administration in 1973 was assumed in the development of the thrifty plan (and the three more expensive plans). If that enrichment level is not adopted, the nutritional goal for iron will not be met by the thrifty plan (or the three more expensive plans) for young children, teenage girls, and women of childbearing age, when average selections within food groups are made. However, the goal can be met through the frequent selection of foods providing important amounts of iron, such as liver, heart, kidney, lean meats, shellfish, dry beans, dry peas, dark-green vegetables, dried fruit, cereals with iron added, and molasses. Plans for all sex-age categories provide iron in excess of the amount specified by the NAS-NRC as likely to be furnished by a balanced and varied diet—6 mg of iron/1000 kcal—when current enrichment levels are assumed and average selections within food groups are made. Iron-fortified cereal is recommended for infants and children 1 to 2 years of age.

The vitamin B₆, vitamin B₁₂, and magnesium content of many foods in the plan is not known. Nevertheless, a rough estimate was made of levels provided by the plan. Foods in the thrifty plan (and the

three more expensive plans) furnish more than the RDA for vitamin B₁₂ but do not meet the RDA for vitamin B₆ and magnesium for several sex-age categories. Plans that meet the nutritional goals for vitamin B₆ and magnesium can be developed by using the food composition data available, but such plans contain large amounts of vegetables, fruit, and cereal—two to three times as much as consumed by some sex-age categories in 1965–66. Such distortion of food consumption patterns is not justified on this basis. Therefore, 80 percent of the RDA for vitamin B₆ and magnesium was used as the basis for goals in developing all of the USDA food plans.

Phosphorus levels of foods in the plans were not calculated but are believed to be well above the RDA. The use of iodized salt is recommended as an efficient way to supplement dietary iodine.

The requirement for vitamin D for normal persons can be met by exposure to sunlight. However, for infants and persons whose activities limit their exposure to sunlight, the allowance should be provided in the diet by such foods as eggs, liver, butter, and milk fortified with vitamin D or by supplementation.

Insufficient reliable information is available on the content in foods of the three other nutrients for which RDA are set—vitamin E, folacin, and zinc—to make reliable estimates of levels provided by the plans.

Food plans developed to meet the RDA would be expected to provide generous amounts of nutrients for most persons. The NAS-NRC states that the basis for the RDA is such that “even if a person habitually consumes less than the recommended amounts of some nutrients, his diet is not necessarily inadequate for those nutrients.” (6).

Allowances are not specified by the NAS-NRS for some dietary factors of adequate diets. An example is linoleic acid, an essential fatty acid found in large concentrations in many oils that come from plants. Also, dietary fiber is necessary for the normal functioning of the intestinal tract. Good sources of fiber include whole-grain cereals, fruits, vegetables, and legumes, such as dried peas and beans.

Planning Meals Based on the Thrifty Plan.—Meals based on the thrifty plan will not be elaborate. They rely heavily on cereal and bread, and contain less meat, poultry, and fish and less vegetables and fruit than most families customarily eat. However, food managers with interest and skill in buying and preparing food can serve varied and appetizing meals based on the plan.

The week's menus in Table 4 illustrate how foods in the plan can be combined into appetizing and nutritious meals and snacks. Sample meals for a month, with recipes and lists of foods used in their preparation for a family of four following the plan, have been prepared and tried by several families receiving food stamps. These sample meal plans are available upon request from the Consumer and Food Economics Institute. (See footnote 1.) Additional economical meal plans, allowing for preference of individual families for foods within food groups, can be prepared based on the thrifty plan.

In estimating costs for the thrifty plan, food selections within food groups are based on selections of the survey households used in deriving food consumption patterns for the plan. Such selections are used, recognizing that some families following the plan might not have either the skill or the opportunity to consistently select foods within

food groups that are more economical than those made on the average by these survey households. However, many families on limited food budgets will have to change the amounts of food groups they ordinarily use to follow the plan. Nutrition educators can use the plan and materials based on the plan to encourage families to make these changes to achieve nutritious diets.

Other Economical Food Plans.—The thrifty plan is only one of many nutritious combinations of food groups at extremely low cost. Amounts of food groups in consumption patterns could be changed in other ways to provide nutritious diets. While such combinations would deviate further than the thrifty plan from food consumption patterns, they might be acceptable to some households.

Other food plans at the same or lower cost than the thrifty plan could be developed if selections of foods within food groups were limited to only those foods which are the least expensive, rather than selections typical of those of survey households. For example, the thrifty plan contains some fluid milk, as was typical of the consumption of the survey households. Nonfat dry milk costs only about half as much as fluid milk, yet provides as much or more of most nutrients supplied by fluid milk. Therefore, a plan that assumes the use of nonfat dry milk exclusively might be developed at a cost lower than the cost of the thrifty plan. Or a plan at the same cost as the thrifty plan might be developed with only nonfat dry milk and more meat, poultry, and fish and less dry beans and grain products than the thrifty plan.

Through guidance materials and nutrition education programs, families using food stamps and other families wishing to economize on food are encouraged to, and may alter their consumption to, include only the economical foods within the food groups.³ However, for purposes of estimating the nutritive value and the cost of a plan for use nationwide, selections of foods based on those made on the average by survey families with relatively low food costs are believed to be more reasonable.

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³ One USDA publication that provides information on food shopping for consumers interested in economizing on food is "Your Money's Worth in Foods," USDA, HG-183. Single copies are available free from the Office of Communication, U.S. Department of Agriculture, Washington, D.C. 20250.

TABLE 1.—THRIFTY FOOD PLAN, AMOUNTS OF FOOD FOR A WEEK¹

Family member	Milk, cheese, ice cream ² (quarts)	Meat, poultry, fish ³ (pound)	Eggs (number)	Dry beans, and peas, nuts ⁴ (pound)	Dark- green, deep- yellow vegetables (pound)	Citrus fruit, tomatoes (pound)	Potatoes (pound)	Other vegetables, fruit (pound)	Cereal (pound)	Flour (pound)	Bread (pound)	Other bakery products (pound)	Fats, oils, (pound)	Sugar, sweets (pound)	Accessories ⁵ (pound)
Child:															
7 mo to 1 yr.....	4.95	0.39	1.2	0.15	0.41	0.55	0.09	2.49	1.02	0.02	0.08	0.04	0.04	0.19	0.05
1 to 2 years.....	3.30	.83	3.3	.17	.22	.89	.65	2.26	1.02	.31	.78	.24	.11	.30	.37
3 to 5 years.....	3.54	.95	2.5	.28	.20	.92	.88	2.28	1.03	.37	.94	.53	.38	.74	.59
6 to 8 years.....	4.22	1.27	2.4	.49	.22	1.10	1.23	2.50	1.12	.62	1.42	.79	.51	.94	.84
9 to 11 years.....	4.92	1.61	3.4	.53	.28	1.52	1.48	3.38	1.34	.81	1.82	1.10	.60	1.20	1.10
Male:															
12 to 14 years.....	5.18	1.79	3.6	.67	.33	1.45	1.59	3.30	1.22	.81	2.07	1.13	.77	1.21	1.45
15 to 19 years.....	5.08	2.35	4.0	.43	.32	1.70	2.10	3.43	.98	.99	2.36	1.46	1.00	1.05	1.73
20 to 54 years.....	2.57	3.03	4.0	.44	.39	1.80	2.02	3.69	.89	.92	2.29	1.33	.95	.86	1.24
55 years and over.....	2.37	2.45	4.0	.25	.51	1.85	1.75	3.77	1.09	.80	1.90	1.12	.79	.94	.73
Female:															
12 to 19 years.....	5.35	1.80	3.8	.28	.42	1.74	1.22	3.61	.72	.76	1.49	.84	.51	.74	1.36
20 to 54 years.....	2.81	2.41	4.0	.27	.52	1.86	1.51	3.39	.90	.67	1.41	.67	.57	.57	1.18
55 years and over.....	2.85	1.84	4.0	.19	.60	2.02	1.26	3.73	1.12	.68	1.30	.58	.37	.45	.66
Pregnant.....	7 5.25	2.69	4.0	.42	.56	2.17	1.89	4.03	1.13	.58	1.41	.66	.59	.58	1.48
Nursing.....	7 5.25	3.00	4.0	.38	.57	2.36	1.92	4.27	.98	.63	1.56	.82	.80	.75	1.54

¹ Amounts are for food as purchased or brought into the kitchen from garden or farm to prepare all meals and snacks for the week. Amounts allow for a discard of about 5 percent of the edible food as plate waste, spoilage, etc.

² Fluid milk and beverage made from dry or evaporated milk. Cheese and ice cream may replace some milk. Count as equivalent to a quart of fluid milk: Natural or processed Cheddar-type cheese, 6 oz; cottage cheese, 2½ lb; ice cream or ice milk, 1½ qt; unflavored yoghurt, 4 cups.

³ Bacon and salt pork should not exceed ½ lb for each 5 lb of this group.

⁴ Weight in terms of dry beans and peas, shelled nuts, and peanut butter. Count 1 lb of canned dry beans, pork and beans, kidney beans, etc., as 0.33 lb.

⁵ Includes coffee, tea, cocoa, soft drinks, punches, ades, leavenings, and seasonings.

⁶ Cereal fortified with iron is recommended.

⁷ For pregnant and nursing teenagers, 7 qt is recommended.

TABLE 2.—ESTIMATED COST OF 1 WEEK'S FOOD AT HOME,¹ UNITED STATES AVERAGE, SEPTEMBER 1975

Family or family member	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan
Family of 2: ²				
20 to 54 years.....	\$22.30	\$29.10	\$36.60	\$44.10
55 years and over.....	19.90	25.70	32.00	38.40
Family of 4:				
Couple with children, 1 to 2 and 3 to 5 years.....	31.60	40.90	51.10	61.50
Children, 6 to 8 and 9 to 11 years.....	38.10	49.50	62.10	74.80
Family members: ³				
Child:				
7 mo to 1 yr.....	4.40	5.40	6.70	7.90
1 to 2 years.....	5.10	6.60	8.10	9.70
3 to 5 years.....	6.20	7.80	9.70	11.70
6 to 8 years.....	7.90	10.20	12.80	15.40
9 to 11 years.....	9.90	12.80	16.00	19.30
Male:				
12 to 14 years.....	10.60	13.60	17.10	20.50
15 to 19 years.....	11.70	15.10	18.90	22.80
20 to 54 years.....	11.20	14.70	18.60	22.50
55 years and over.....	9.90	12.90	16.10	19.40
Female:				
12 to 19 years.....	9.40	12.10	15.10	18.00
20 to 54 years.....	9.10	11.80	14.70	17.60
55 years and over.....	8.20	10.50	13.00	15.50
Pregnant.....	11.30	14.50	17.90	21.40
Nursing.....	12.00	15.40	19.20	23.00

¹ Assumes that all meals and snacks are prepared at home. Deduct from amount in table for a family member, 5 percent for each meal eaten out (not prepared from home food supplies) during the week. For a guest, add 5 percent of amount shown for person of appropriate sex and age for each meal eaten with the family. Costs do not include allowance for purchase of nonfood items such as paper goods, soaps, pet foods, cigarettes and the like. Current costs are available on request from the Consumer and Food Economics Institute, Agricultural Research Service, U.S. Department of Agriculture, Hyattsville, Md.

² 10 percent added for family size adjustment. See footnote 3.

³ Costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person, add 20 percent; 2-person, add 10 percent; 3-person, add 5 percent; 5- or 6-person, subtract 5 percent; 7-or-more person, subtract 10 percent.

TABLE 3.—NUTRITIVE VALUE FOR THRIFTY FOOD PLAN¹ AS PERCENTAGE OF THE NUTRITIONAL GOALS²

	Child						Male				Female			
	1 to 2		3 to 5		6 to 8		9 to 11		12 to 14		15 to 19		20 to 54	
	Under 1 yr	yr	yr	yr	yr	yr	yr	yr	yr	yr	yr	yr	yr	55 yr or more
Food energy	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Protein	223	204	182	200	200	208	198	170	150	130	130	135	147	111
Calcium	166	100	100	125	125	126	106	106	110	100	100	100	100	101
Iron	3 100+	3 100+	115	185	185	179	135	152	257	233	104	192	109	121
Vitamin A value	173	140	134	120	120	117	100	109	108	110	131	134	132	125
Ascorbic acid	100	100	105	126	126	157	149	167	164	163	160	167	160	146
Niacin ¹	194	218	204	210	210	213	215	204	224	221	227	249	248	250
Riboflavin	271	219	166	171	171	192	172	147	133	133	164	171	156	150
Thiamin	157	175	146	137	137	144	139	134	135	146	138	151	150	127
Vitamin B ₆	330	285	195	172	172	165	148	118	115	110	100	100	100	100
Vitamin B ₁₂	4 100+	4 100+	286	244	244	223	184	193	172	159	170	148	157	156
Magnesium	313	174	146	148	148	143	126	111	114	103	118	108	111	100

¹ Nutritive value of the edible portion of food as purchased, adjusted to allow for vitamin losses in cooking. Discard of meat drippings and one-half of the separable fat from meat is assumed. For bread and flour, enrichment levels for iron proposed in 1973 are assumed. Values for niacin for all foods include niacin in the food and an estimate of the niacin formed in the body from the protein substance, tryptophan. Values for vitamin B₆, vitamin B₁₂, and magnesium are estimated for many foods in the plans because of insufficient information on content of foods.

² Nutritional goals are based on the recommended dietary allowances, 1974, for all nutrients except vitamin B₆ and magnesium, for which 80 percent of the RDA is used. The goals, the RDA

base plus 5 percent, allows for some discard of edible food. Therefore, the amounts of foods in the plan provide 5 percent more than the percentage shown, if no edible food is discarded. A range of 105 to 110 percent of the RDA for food energy is allowed. Fat is limited to provide no more than 40 percent of food energy.

³ Assumes that cereal fortified with iron is used. Percentage varies depending on the level of fortification of cereals used.

⁴ Percentage varies depending on level of fortification of cereals used.

TABLE 4.—A WEEK'S MENU BASED ON THE THRIFTY FOOD PLAN

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Breakfast.....	Orange juice French toast Sirup Beverage	Orange juice Ready-to-eat cereal Doughnuts Beverage	Peaches, sliced Grits Cinnamon toast Beverage	Orange juice Eggs Pan-fried potatoes Toast Beverage	Peaches, sliced Ready-to-eat cereal Toast Beverage	Apple juice Farina Toast Beverage	Apples quartered Pancakes Sirup Beverage
Lunch.....	Beef pot roast Gravy Mashed potatoes Mixed vegetables Bread Ice milk Beverage	Grilled cheese sandwiches Macaroni salad Bake apples Beverage	Frankfurters Sauerkraut Bread Oatmeal cookies Beverage	Beef macaroni soup Salatine crackers Plums Beverage	Noodle soup Peanut butter and jelly sandwiches Carrot sticks Graham crackers Beverage	Frankfurter bean soup Saltine crackers Oatmeal cookies Beverage	Cheese sandwiches Gelatin (with apple juice and celery) Meringue pie Beverage
Dinner.....	Beans in tomato sauce Macaroni salad Pear halves Cornbread Gelatin Beverage	Beef stew with vegetables Cornbread Ice milk Beverage	Beef pie with vegetables Refrigerator biscuits Lettuce wedges with dressing Peanut butter cake Beverage	Fried chicken Rice Gravy Corn Bread Peanut butter cake Beverage	Beef patties Baked potatoes Stewed tomatoes Muffins Ice milk Beverage	Cheese rarebit on toast French-fried potatoes Collards Meringue pie Beverage	Spaghetti with meat sauce Tossed salad (lettuce car- rots, dressing) Bread sticks Ice milk Beverage
Snacks.....	Doughnuts	Bread and jelly sand- wiches	Cheese and crackers	Doughnuts	Peanut butter cake	Graham crackers	Ready-to-eat cereal

Note: Milk for everyone at least once daily, and for children, teenagers, and pregnant and nursing women, more often. Spreads for bread and sugar for cereal, coffee, and tea may be added, if desired.

CANNING AND FREEZING—WHAT IS THE PAYOFF?

[By Evelyn H. Johnson, Ph. D., Home Economics, Extension Service, USDA]

The science of nourishment is both intellectual and practical. The practical aspect was brought forcibly to our attention in recent months as some 30 million Americans rushed out to beat inflation with a garden hoe and a jar lid.

These gardeners have produced some prize-winning blisters and aches. They have reached a low level of despair with the elusiveness of canning lids, the fickleness of jelly that didn't jell, pickles that didn't pickle, and tomatoes that didn't pH properly.

But many gardeners have found an unsuspected green thumb. They exposed friends and family to fresh-from-the-garden produce and take-home presents. They have freezers and shelves well stocked with home preserved fruits and vegetables containers of fruits and vegetables.

A nationwide survey among food shoppers in 1973 indicates that their two most important food-related concerns are (1) providing families with nourishment and (2) saving money on food prices.¹ Assuming that these concerns extend to foods preserved at home, and that families will continue to grow some of their food or have access to plentiful sources of perishable foods, we can anticipate questions in the future about the cost component of preserving food at home.

Home food preservation saves money. Or does it? There are many hidden costs in home canning and freezing of foods that must be considered—costs of produce, equipment, heat and energy consumption, and interest on large cash outlays such as for a freezer. Furthermore, there is a considerable time expenditure. If you have marketable skills, your time might be more profitably spent earning dollars instead of gardening or preserving food.

COST OF PRODUCE FOR CANNING AND FREEZING

Produce used in home canning and freezing could come from several sources: home gardens, roadside markets, pick-your-own fields, or gifts from friends. The table below lists some sources of green peas and the prices you might expect to pay.

Prices of 1 bushel of green peas from various sources¹

Source :	Price
Roadside stand-----	\$6. 00
You-pick field-----	3. 00
Home garden-----	² 1. 17
1 bu=approx. 15 pts.	

¹ Data gathered July 1975 in Ithaca, N.Y. Reported by R. Klippstein and E. Wallace, Cornell University.

² Plus share of fixed costs.

¹ Food and Nutrition, Knowledge and Beliefs, a nationwide study. Bureau of Foods, FDA-DHEW. 1973.

Before you rush out to plant a garden, consider the potential costs: tilling the soil, fertilizer, garden tools, pesticides and water. Remember, that even experienced gardeners suffer some crop failures as well as bountiful harvests!

In 1973, Mrs. Barbara Bridges, a student at the University of Maine, did a research project entitled "Home Vegetable Gardening—From Seed to Table." (An Economic Study) The results of this theoretical study are shown in Table 1.

TABLE 1.—*Cost of garden produce (theoretical study) 4,800 sq. ft. plot) 1973*

[By Barbara Bridges, University of Maine]

Expenses: ¹

Seeds -----	\$20. 00
Fertilizer -----	9. 60
Lime -----	9. 16
Pesticide -----	5. 00
Custom plowing -----	10. 00
Tools -----	10. 00
Miscellaneous ² -----	28. 18
Land -----	-----
Labor -----	-----

Total ----- 92. 64

Harvest—Fresh vegetables:

Fresh vegetables, wide variety ³ -----	1,409 lbs
Total -----	\$521. 11

¹ All items were priced at a local supply store.

² A charge of 2 cents per pound.

³ Yield and price of each was computed using local store prices.

NOTE.—Net income equals approximately \$430.

Add \$189. for labor to the expense column if the gardener feels that his time could be profitably spent elsewhere. The garden will still return to the family budget about \$240. Multiply this by several years of gardening, or by the local population of gardeners and the result is impressive.

The Wesley plot is one among 2,500 gardens no public land rented out this growing season (Table 2 below).

TABLE 2.—*Cost of garden produce (Milwaukee, 30' x 30' plot) 1975*

[By Julian A. Wesley, Ext. Agent, Milwaukee Co.]

Expenses:

Seeds -----	\$12. 50
Plot rental -----	8. 00
Fertilizer and tools -----	6. 95
Labor, 75 man-hours -----	-----
Transportation -----	-----
Water -----	-----

Total ----- 27. 45

Harvest—Fresh vegetables:

Fresh vegetables, wide variety -----	475 lbs.
Plus 12 doz. ears corn, 54 cucumbers, lettuce, kale, 21 bunches beets, 41 peppers, 5½ bunches radishes -----	-----

Total ----- ¹ \$179. 53

¹ Based on average of three outlets.

NOTE.—Net income equals approximately \$152.

A cash outlay of \$27.45 paid off in fresh produce valued at \$179.53 based on the average prices of three food outlets. "You have to consider

vegetable growing as a recreation. You can't pay yourself by the hour," Wesley emphasized. "About 75 man-hours at \$2.00 per hour would wipe out most profits."

Sam D. Cotner, Extension horticulturist, College Station, Texas, reports that the Texas Agricultural Experiment Station in an effort to help consumers cope with food prices initiated two "back yard gardens" in late winter-early spring of 1974—one for fruit production and the other for vegetables. The vegetable garden was treated as a simple family garden. The fall-winter vegetable harvest was valued at \$49.37; the spring-summer harvest at \$250.57 for a total of \$299.94. Out-of-pocket costs show less than \$30.00 for seed and plants, about \$5.00 for fertilizer and about \$5.00 for insect and disease control for a total cash outlay of about \$40.00 exclusive of labor, water and plot rental.

In addition to the cash a family need not spend at the supermarket, a gardener gains through healthy outdoor exercise, opportunities for family activities, and across-the-fence neighborliness. Perhaps, the decreased time spent in shopping for fresh produce is an asset for some families. Certainly all in the family welcome the fresh-from-the garden taste when dinner is served.

COST OF HOME FREEZING AND STORAGE OF FOOD

Your garden is setting a production record. Your favorite supermarket has a special on locally grown green beans. Should you freeze or not freeze? Marcile Allen, Extension specialist in nutrition at Purdue University thinks, "Freezing may be the answer—if you have freezer space. It can be the key to varied family meals, an easy and excellent way to preserve many of today's surpluses for tomorrow. But selecting a freezer to fit your needs and filling that freezer with high quality food takes time, energy, money, and know-how."

The two main advantages of freezing are that the procedure is simple to do and will keep foods closer to fresh than any other method of preservation. The main disadvantages are the cost of purchase and operation of the freezer.

Studies recently made by Extension nutritionists in the Division of Nutritional Sciences at Cornell University, indicate that food frozen at home costs almost 19 cents per pound more than that purchased and consumed even when using an energy-efficient freezer to full capacity in an area where electric rates are relatively low. High electric rates, poorly operating freezers, or inefficient use of freezer space or materials will add to the cost; in some cases, home freezing adds 53 cents a pound to the cost of food, according to the Cornell researchers.

FIXED COSTS

To calculate the fixed overhead cost of any freezer, the total cost including finance charges, taxes, delivery and installation should be divided by the 20 years the new freezer is expected to last. If the freezer is purchased without financing, allow 5 to 6 percent for the interest foregone on the purchase price. An allowance for repairs should be made, and the U.S. Department of Agriculture estimates that repairs will cost 2 percent of the purchase price annually.

The following costs are fixed annual overhead for owning and operating a 15-cubic foot freezer which cost \$300.00, plus 7 percent sales tax and a \$20.00 delivery charge.¹

TABLE 3.—*Fixed overhead costs*

Amortization (\$341 divided by the 20-year expected life)-----	\$17. 05
Interest foregone (\$314 at 6 percent)-----	20. 46
Annual repair allowance (at 2 percent of \$300)-----	6. 00
Electricity to maintain 0° F-----	36. 75 to 204. 12
Total overhead-----	80. 26 to 247. 63

VARIABLE COSTS

Research has shown that it takes 0.1 kilowatt-hour to freeze a pound of food and lower its temperature to 0° F. The electrical energy required to maintain 0° F in a home freezer varies depending upon size and type. You pay heavily for the convenience of frostless freezers, as shown below.

TABLE 4.—ELECTRICAL ENERGY COSTS OF CONVENTIONAL VERSUS FROSTLESS FREEZERS

	Average wattage	Approximate kilowatt-hour used per year	Cost per year (4 cents per kilowatt-hour)
15 ft ³ conventional freezer-----	341	1, 165	\$46. 60
15 ft ³ frostless freezer-----	440	1, 761	\$70. 44

Note: The energy cost of operating a freezer for 1 yr varies considerably too, according to size.

TABLE 5.—ENERGY COST OF OPERATING A FREEZER FOR 1 YEAR

Size of freezer (cubic feet)	Capacity of freezer (pounds)	Energy to maintain 0°F (kilowatt-hour per cubic foot per day)	Energy to maintain 0°F (kilowatt-hour per year)	Cost of energy per year (4 cents per kilowatt-hour)
6-----	210	0. 30	657	\$26. 28
12-----	420	. 25	1, 095	43. 80
18-----	630	. 20	1, 314	52. 56

Note: The cost of energy to freeze 1 lb. of food is given below. Data is adapted from the Cornell study.

Source: Adapted from Van Zante, H. J., 1964. "Household Equipment Principles." Prentice-Hall, Inc., Englewood Cliffs, New Jersey, pp. 268-269.

TABLE 6.—ENERGY COST OF HOME FREEZING 1 LB OF FOOD

Size of freezer (cubic feet)	Turnover rate (per year)	Total pounds frozen	Energy to freeze, lower and maintain 0°F, kilowatt-hour per pound	Cost of energy to freeze 1 lb of food, 4 (cents) per kilowatt-hour
6-----	1X-----	210	3. 2	12. 8
	1.5X-----	315	2. 2	8. 8
	2X-----	420	1. 7	6. 8
12-----	1X-----	420	2. 7	10. 8
	1.5X-----	630	1. 8	7. 2
	2X-----	840	1. 4	5. 6
18-----	1X-----	630	2. 2	8. 8
	1.5X-----	945	1. 5	6. 0
	2X-----	1, 260	1. 1	4. 4

¹ "Actual Costs of Home Food Preservation" by Ruth B. Klippstein, Prof. Division of Nutrition Sciences and Elaine Wallace, Coop. Ext. Serv., Cornell Univ. 1975.

AMORTIZATION

According to 1974 figures from the USDA, families keep new freezers an average of 20 years; used freezers an average of 9 years. Freezers may or may not last longer than that and many factors influence the decision to replace or dispose of an appliance. Spreading the purchase price over the life expectancy is a good estimate of the annual cost of owning a freezer.

INTEREST FROM AN ALTERNATE INVESTMENT

The money put into the freezer may or may not have been invested to bring cash income or to pay debts. If interest is included, the rate should be based on the return that could come from some other investment.

PACKAGING

The cost of packaging including reusable containers is about 2–6 cents per pound. Aluminum foil cost more; rigid containers, amortized over several years may cost less.

TABLE 7.—COST OF PACKAGING TO FREEZE 1 LB OF FOOD

Packaging material	Size	Price (cents)
Heat sealable pouch.....	6½ inches by 8..	6.4–6.7
Bag with twist tie.....	1 pint.....	¹ 1.2–2.0
Plastic carton.....	do.....	² 19.0–38.0
Glass jar.....	do.....	² 21.0–22.0
Plastic freezer wrap.....	1½ ft. ²	1.2–10.5
Coated freezer paper.....	do.....	1.8–4.5
Heavy duty aluminum foil.....	do.....	5.2

¹ This cost does not include the cost of cover boxes which shape the filled bags into uniform sizes for compact storage and prevent tears in the bags. The cost of the pint size cover box is about 2 to 4 cents and can be used many times.

² Reusable.

WATER AND FUEL TO PREPARE FOODS FOR FREEZING

The cost of water and fuel used in washing, blanching and chilling foods is estimated at 0.004¢ or slightly less than one-half cent per pound of food.

The cost of operating a 15-cubic foot conventional chest style freezer, 525 lbs. capacity, purchased new, with single turnover per year is given in Table 8.

TABLE 8.—Operational cost of a 15-cubic foot freezer/per pound

Electrical energy:	
0.1 kWh per pound to freeze	Cost per pound
2.3 kWh per pound to maintain 0°F	in cents
2.4 kWh @ 4¢ per kWh.....	9.6
Packaging:	
Water and steam repairs.....	5.0
(\$300.00) 2 percent.....	0.4
525 pounds.....	1.1
Freezer, amortized:	
(\$300.00)/20 years	
525 pounds.....	2.9
Interest from alternate investment:	
(\$300) 6 percent	
525 pounds.....	3.4
Total cost per pound.....	22.4

This cost per pound would be about what you would pay at the market for the least expensive frozen vegetables and fruits. The cost of operating a freezer does not increase appreciably with a turnover of food. There is a small added cost for fuel for initial freezing of the food.

The table below shows costs of operating a 12 cubic foot freezer filled to capacity 1 time during a year (360 pounds of food), 1½ times (540 pounds), and 2½ times (900 pounds). Note the slight increase in cost for electricity for freezing food with increased usage. There is also an increase in packaging costs. Note that in this table amortization was figured over 15 years; interest rate at 3 percent; and packaging at 3 cents per pound, resulting in an overall operational cost of 24 cents per pound of food with a single turnover.

TABLE 9.—COST OF OPERATING A 12-FT³ FREEZER¹

	Capacity 1× (360 lb)	Capacity 1-1½× (540 lb)	Capacity 2-1½× (900 lb)
Net depreciation, based on 15 yr usage, cost of \$250 when new	\$16.39	\$16.39	\$16.39
Return on investment foregone at 3 percent	11.26	11.26	11.26
Repairs (2 percent of purchase price)	5.00	5.00	6.00
Electricity for freezing food at 4 cents per kilowatt hour	1.44	2.16	3.60
Electricity for maintaining 0° F. 1,100 kilowatt hours at 4 cents per kilowatt hour	44.00	44.00	44.00
Packaging, average 3 cents per pound	10.80	16.20	27.00
Total cost per year	88.89	95.01	107.25
Cost per pound (cents)	.24	.17	.12

¹ Prepared by Jo Anne Barton, extension specialist foods and nutrition, VPI and Virginia State University, 1975.

The following table shows a range of the fixed and variable costs of freezer operation. (The Cornell Division of Nutritional Sciences, 1975)

TABLE 10.—ANNUAL COST OF FREEZING AND STORING FOOD IN A 15-FT³ FREEZER

Expense	Pounds of food stored	
	525	1,312
Overhead	\$80.26–\$247.63	\$80.26–\$247.63
Cost to store prepackaged, frozen food (overhead divided by the number of pounds stored)	.15–.47	.06–.18
Packaging (at 0.05 per pound)	26.25	65.60
Electricity to freeze food (at 0.1 kWh per pound, ranging from .03 to .09 per kilowatt-hour)	1.58–4.73	3.94–11.81
Total annual cost	\$108.09–\$278.61	149.80–325.04
Total cost per pound to package, freeze and store food	.20–.53	.11–.25

The Cornell researchers warn that just storing food in a freezer may raise the price by 20 cents per pound over a year's time. Opening the doors, keeping the freezer in a warm place, or power cutbacks will increase the electrical costs. Excessive or wasteful use of packaging materials is costly also.

CONCLUSION

To save money by home-freezing foods, a family would need to select a freezer to fit family needs, use it properly, freeze only those foods the family likes to eat and in amounts they can enjoy, and find economical sources of these foods.

COSTS OF HOME CANNING

Canning is probably the most economical and practical method of preserving food in the home. The canning operation varies tremen-

dously from household to household—as to what foods are canned, how they are processed, the kinds of containers and equipment, and the amount canned at a given time. Some families combine their canning activities and share the results. Most home canners grow their food; others purchase it at farm markets or harvest fields. These factors, as well as the costs of labor, energy, water and ingredients added during the canning process determine the total cost of home canning. Inconsistency of these factors from household to household, and community to community makes it impossible to derive a cost (per pound of home canned food) that applies to *all* household situations. Information can be provided to help the home canner figure fairly accurately the costs of canning various foods in a given household situation.

PRODUCE

The cost of produce may be the major expense if it is purchased at local food markets. Growing your own, or buying directly from the farm and orchard, may provide good quality produce at the height of the season for best buys. Consider the cost of added ingredients—sugar, vinegar, spices, pectin and salt. (Figure the cost of sugar by allowing 2¼ cups per pound.)

EQUIPMENT

The most expensive piece of equipment for home canning is a pressure canner, ranging in price from \$40–\$75 for models commonly used. Smaller models priced from \$20–\$35 may be more practical for the small family or inexperienced canner who doesn't plan to can large quantities of food. The initial cost of the pressure canner can be amortized over an anticipated 15–20 year life expectancy. Add annually 2 percent of the purchase price to cover the cost of repairs—gasket, pressure control safety valve. There should not be a need for repairs for several years after the purchase of a new canner.

A large water bath canner is needed for processing fruits, tomatoes, pickles and preserves. One can be purchased for \$6. A jar lifter for about \$2–\$3, a funnel and canning book are all that is needed to turn the home kitchen into a small cannery. New canning jar units range in price from about \$2.29–\$3.49. The price of glass jars can be amortized over a 10 year average life span. Canning lids vary widely in price from 1.5 cents–5 cents per lid. Rings are about 1 cent amortized over 10 years.

ENERGY

The cost of electrical energy required for processing can be determined if the following are known: electrical input of each range surface unit being used, time at each heat setting, and local fuel costs.

Setting	5 heat electric units ¹		7 heat electric units ¹	
	6-in unit (watts)	8-in unit (watts)	Dial designation	Watts
High.....	1, 400	2, 600	High.....	1, 469. 1
Medium-high.....	720	1, 150	2.....	920. 4
Medium-low.....	500	640	3.....	713. 9
Low.....	180	287	Medium.....	418. 9
Simmer.....	125	160	5.....	271. 4
			6.....	247. 8
			Low.....	59. 0

¹ Vanzante, H. J. 1964. "Household Equipment Principles." Prentice Hall, Inc. Englewood Cliffs, N.J.

The amount of gas used can be determined only if a monitoring meter is used. Data are not available for this report though costs should not be greater than the costs of electrical power.

WATER

Water for washing produce and steam for blanching can be estimated at a cost of 0.4 cent or about one-half cent per pound of food canned. See Table 11 for an estimated cost for canning 280 quarts of food. Note that the cost of food and labor is not included.

TABLE 11.—Estimated cost for canning 280 quarts

Pressure canner (amortized over 20 years)-----	\$3.25
Repairs -----	.75
Water bath canner (amortized)-----	.60
Small equipment-----	.50
Jars and lids (amortized over 10 years)-----	12.00-16.00
Water and steam-----	5.00
Electricity for processing @ 4.5¢/Kwh :	
140 quarts presser canner-----	1.30
140 quarts water bath canner-----	2.00
Total -----	25.00
Per quart-----	.09

Studies recently made by Klippstein and Wallace, Extension nutritionists in the Division of Nutritional Sciences at Cornell University, indicate that the cost for canning a quart of tomatoes at home ranged from 4.3 cents if jars were on hand and the tomatoes were free of cost to almost 51 cents if both jars and tomatoes were bought. They estimated the range in cost for home canning green beans as 4 cents a quart to 63 cents, and cost for a quart of peaches in syrup in the range of 20.5 cents to 90.5 cents. Their cost analysis for canning the three foods is shown in Table 12.

TABLE 12.—COST ANALYSIS OF HOME CANNING—JUNE 1975

[In cents]

Produce (in quarts)	Cost of jar units or lid		Cost of produce per quart ¹	Cost of additional ingredients per quart (sugar)	Cost of processing per quart (electricity)	Total cost per quart (using electricity)
	Jar and lid	Lid only				
Peaches 1 bu at \$9.25 yield 20 qt):						
Jars on hand-----	0	4.6	Gift: 0-----	15	0.9	20.5
Jars on hand-----	0	² 4.6	Buy: 46.3-----	15	.9	66.8
Jars purchased-----	28.3	0	Gift: 0-----	15	.9	44.2
Jars purchased (at \$3.39 per doz)-	28.3	0	Buy: 46.3-----	15	.9	90.5
Tomatoes (1 bu at \$0.25 yield 17 qt):						
Jars on hand-----	0	3.3	Gift: 0-----		1.0	4.3
Jars on hand-----	0	³ 3.3	Buy: 25.0-----		1.0	29.3
Jars purchased-----	24.9	0	Gift: 0-----		1.0	25.9
Jars purchased (at \$2.99 per doz)-	24.9	0	Buy: 25.0-----		1.0	50.9
Green (1 bu at \$6.00 yield 16 qt):						
Jars on hand-----	0	3.3	Gift: 0-----		.6	3.9
Jars on hand-----	0	³ 3.3	Buy: 37.5-----		.6	41.4
Jars purchased-----	24.9	0	Gift: 0-----		.6	25.5
Jars purchased (at \$2.99 per doz)-	24.9	0	Buy: 37.5-----		.6	63.0

¹ Cost in Ithaca, 1974 growing season.

² At 55 cents per dozen.

³ At 39 cents per dozen.

Note that the Total Cost Per Quart figures does not include cost of time spent and equipment used. Adding cost of equipment would add from 1/4-1/2¢ per quart to the total cost as given. Total cost per quart

could be reduced through greater yield per bushel by careful shopping or home gardening.

The cost of processing per quart computation was determined in the laboratory by estimated time and energy to process one canner of food (7 quarts). See Table 13.

TABLE 13.—WATER BATH

	Time	Burner temperature	Kilowatt-hours used
Bring hot tap water to boiling.....	30	High.....	1.300
Return to boil after jars are added.....	15	do.....	.650
Processing raw pack peaches.....	30	Medium-low.....	.320
Processing raw pack tomatoes.....	45	do.....	.480
Total energy to process a canner of raw pack peaches.....			2.270
Total energy to process a canner of raw pack tomatoes.....			2.430

TABLE 14.—PRESSURE CANNER

	Time	Burner temperature	Kilowatt-hours
Bring 3 inches water to boil.....	10	High.....	0.433
Exhaust.....	10	do.....	.433
Bring to 10 pound pressure.....	10	do.....	.433
Processing raw pack green beans.....	25	Medium-low.....	.267
Total energy to process canner of raw pack green beans.....			1.566

Cost of electrical energy to can was based on rates obtained from New York State Electric and Gas Company, effective as of April, 1974, assuming the average household used more than 100 kWh of electricity per month. The figure used was 2.8¢ per kWh.

Product	Kilowatt-hours per canner	Cost per canner (cents)	Cost per quart (cents)
Peaches.....	2.27	6.4	0.9
Tomatoes.....	2.43	6.9	1.0
Green beans.....	1.566	4.4	.6

MICHIGAN STATE UNIVERSITY STUDY

Drs. Theodore Wishnetsky and Jerry Case, Cooperative Extension Service, Michigan State University state that the main reasons for the lack of previously published information on home food preservation costs is the inherent uncertainty involved in deciding on the bases to be used for calculating many of the cost factors. They agree that capital costs will not apply at all to some home gardeners and canners, in part to others, and in full to still others. They have therefore computed two sets of capital cost totals for each of two products, green beans and tomatoes. See Table 15. The true value, they believe, will lie somewhere between the upper and lower values. In each set, one value is based on the assignment of total capital cost to the first year's canning operation and the other lower value on the use of the capital items for a 20 year period. They base their data on the arbitrary assumption that a typical family puts up 180 quarts of food per season. They point out that not all harvested produce will be usable. Food lost through spoilage or given away cannot be ignored as an additional

cost factor which raises the net cost per bushel for the home gardener. They suggest there should be no problem in making corrections to compensate for local prices or for variations in yield, where they are known to exist. Corrections for variations in total jars canned per season can also be made without difficulty. They conclude:

“Superior quality (compared to commercially canned) that is attainable for some home gardeners and home canners is an intangible that the researchers made no attempt to quantify. Likewise, the cost of labor was ignored. If it were to be included at the typical manual labor rate, there would be little likelihood for any cost saving for any home gardening/home canning operation. It might be of interest, however, after computing the home gardening/home canning cost for a given commodity (under given, local conditions), to compare that cost with the average price of comparable, commercially-canned material over the next 12 months, to calculate the cost saving (if any) and then divide that figure by the number of hours of labor expended. The figure thus arrived at will represent the \$/hour ‘earned’ by that individual for his labor. Then the question can be posed. Was it worth it?”

CORNELL RESEARCHERS COMPARE COSTS OF HOME AND COMMERCIALY CANNED FOOD

In comparing the cost of home canned foods with commercially canned ones some differences were found by Cornell researchers. See Table 16. The greatest savings from time spent was in canning tomatoes. This study documents earlier assumption that home canning provides substantial savings if produce is home grown and jars and equipment are available from previous years. It points out that there are only small savings if jars and produce have to be purchased. The savings are further reduced if commercially canned foods can be bought in case lots at special discounted prices.

TABLE 15.—COST OF HOME GARDENING AND CANNING—GREEN BEANS AND TOMATOES
TOTAL GARDENING PLUS CANNING COSTS
[Dollars per quart canned]

Commodity	Expandable items ^{1 2}	Capital cost items ^{1 2}		Total cost		
		1-yr payoff	20-yr amortization	With 1-yr payoff of capital costs	With 20-yr amortization of capital costs	With no capital cost required
Green beans:						
Gardening.....	0.30	0.33	0.02	.....	.....	.....
Canning.....	.07	.51	.03	.....	.....	.....
Subtotal.....	.37	{ .84		1.21 .....	.....	0.37
		{ .....		.05	0.42 .....	.....
Tomatoes:						
Gardening.....	.12	.33	.02	.....	.....	.....
Canning.....	.07	.22	.01	.....	.....	.....
Subtotal.....	.19	{ .55 .....		.74 .....	.....	.19
		{ .....		.03 .....	.22 .....	.....

¹ Data for green beans taken from table 15-A.
² Data for tomatoes taken from table 15-B.

TABLE 15A.—COST OF HOME GARDENING AND CANNING—GREEN BEANS¹

	Cost per bushel	Cost per quart canned ²
Expendable (nonreusable) items:		
Gardening costs:		
Seed.....	\$1.00	\$0.0625
Fertilizer.....	.24	.0150
Pesticides.....	2.97	.1856
Water.....	.52	.0325
Subtotal.....		.30
Canning costs:		
Jar lids.....		.05
Jars (breakage factor).....		.01
Energy (heat).....		.01
Miscellaneous.....		
Subtotal.....		.07
	Purchase price	Cost per quart canned ³ Cost per quart canned (amortized) ⁴
Capital cost items:		
Gardening costs:		
Hand tools.....	\$18	\$0.1000
Hose.....	14	.0777
Wheelbarrow.....	22	.1222
Miscellaneous.....	6	.0333
Subtotal ³.....		.33
Subtotal (amortized) ⁴.....		.02
Canning costs:		
Water bath canner.....		
Pressure canner.....	60	.3333
Jars, 15 dozen.....	27	.1500
Miscellaneous.....	4	.0222
Subtotal ³.....		.51
Subtotal (amortized) ⁴.....		.03

¹ See the original report "Cost of Home Gardening and Canning Green Beans and Tomatoes," Summer 1975 by Drs. Theodore Wishnetsky and Jerry Cash, Michigan State University.

² Calculated on basis of 16 quarts canned beans per bushel of raw product.

³ Calculated on basis of 180 quarts canned per season (total for all commodities) and 1-year payoff of capital costs.

⁴ Capital costs if amortized over a 20-year period; "amortized" costs shown in table are 5 percent of comparable "1-year payoff" values.

TABLE 15B.—COST OF HOME GARDENING AND CANNING—TOMATOES¹

	Cost per bushel	Cost per quart canned ²
Expendable (nonreusable) items:		
Gardening costs:		
Plants.....	\$0.80	\$0.0444
Fertilizer.....	.08	.0044
Pesticides.....	1.06	.0589
Water.....	.17	.0094
Subtotal.....		.12
Canning costs:		
Jar lids.....		.05
Jars (breakage factor).....		.01
Energy (heat).....		.01
Miscellaneous.....		
Subtotal.....		.07

See footnotes at end of table.

	Purchase price	Cost per quart canned ³	Cost per quart canned (amortized) ⁴
Capital cost items:			
Gardening costs:			
Hand tools.....	\$18	\$0. 1000	. 0050
Hose.....	14	. 0777	. 0039
Wheelbarrow.....	22	. 1222	. 0061
Miscellaneous.....	6	. 0333	. 0017
Subtotal ³.....		. 33	
Subtotal (amortized) ⁴.....			. 02
Canning costs:			
Water bath canner.....	9	. 0500	. 0025
Pressure canner.....			
Jars, 15 dozen.....	27	. 1500	. 0075
Miscellaneous.....	4	. 0222	. 0011
Subtotal ³.....		. 22	
Subtotal (amortized) ⁴.....			. 01

¹ See the original report "Cost of Home Gardening and Canning Green Beans and Tomatoes," Summer 1975 by Drs. Theodore Wishnetsky and Jerry Cash Michigan State University.

² Calculated on basis of 18 quarts canned tomatoes per bushel of raw product.

³ Calculated on basis of 180 quarts canned per season (total for all commodities) and 1-year payoff of capital costs.

⁴ Capital costs if amortized over a 20-year period; "amortized" costs shown in table are 5 percent of comparable "1-year payoff" values.

TABLE 16.—COMPARISON OF COSTS OF HOME AND COMMERCIALY CANNED FOOD (QUART OF CANNED PRODUCT)

Product/Source of jars	Source of produce	Cost home canned (using electricity) (cents)	Cost per store bought
Peaches:			
On hand.....	Gift.....	20. 5	0. 94—\$1. 10
Do.....	Bought.....	66. 8	
Purchased.....	Gift.....	44. 2	
Do.....	Bought.....	90. 5	
Tomatoes:			
On hand.....	Gift.....	4. 3	. 64—. 90
Do.....	Bought.....	29. 3	
Purchased.....	Gift.....	25. 9	
Do.....	Bought.....	50. 9	
Green beans:			
On hand.....	Gift.....	3. 9	. 62—. 78
Do.....	Bought.....	41. 4	
Purchased.....	Gift.....	25. 5	
Do.....	Bought.....	63. 0	

¹ Canned food price range: April 1975 (Ithaca, N.Y.)

Net weight	Volume
16 to 17 oz.....	1¾ to 2 cups
20 oz.....	2¼ to 2½ cups
29 oz.....	3¼ to 3½ cups

Other monetary factors home canners should consider:

(1) Adequate space for storage. Food may freeze and jars burst resulting in loss of both jar and food. Overheated storage space lowers the quality of the food. Jars may be accidentally broken if stored in the living areas of the house.

(2) Creativity in canning and canning without exact instructions may result in food waste and family illness due to food spoilage.

(3) Unless you are absolutely sure of your canning methods, boil home canned foods 10 minutes or more. This uses some fuel.

(4) Some foods (for example, fresh carrots) are available year round at reasonable cost.

(5) Home canner tomatoes or juice is far more expensive as a source of vitamin C than commercially canned or frozen orange juice. When canning supplies and freezer space are limited, canners should consider carefully the nutritional value of foods available for preserving.

(6) It is economical to can and freeze only the amount that can be used in a reasonable length of time.

CONCLUSION

Canning is probably the most economical and practical method of preserving food in the home. Home canning can provide a great feeling of personal accomplishment; it can bring family members together in creative activity; it provides security in having food within arm's reach; it offers a supply of food prepared according to family preferences and special dietary needs.

The most economical preservation method depends on that family's eating habits. You can't save money by canning green beans when your family only likes frozen ones. You can't save money by growing a garden and canning and freezing food unless someone takes the responsibility for getting the work done.

Let's look at food preservation as a way to save food that would otherwise be lost.

Families considering seriously the economic aspects of home gardening and food preservation might find it helpful to chart the anticipated costs for their specific situation.

Home freezing		Home canning	
Item	Estimated cost	Item	Estimated cost
Cost of freezer amortized.....		Cost of canners amortized.....	
Repairs.....		Replacement parts.....	
Electricity for freezer.....		Jars and lids.....	
Packaging.....		Water and fuel to prepare foods.....	
Water and fuel to prepare foods.....		Seeds and plants.....	
Seeds and plants.....		Fertilizer and insecticides.....	
Fertilizer and insecticides.....		Purchased foods.....	
Purchased food.....			
Total.....		Total.....	

NUTRIENT DATA BANK: A TECHNICAL INFORMATION SYSTEM TO AID PROFESSIONALS

[By Robert L. Rizek and Ritva R. Butrum, Agricultural Research Service, USDA]

Food composition tables have been invaluable for planning adequate diets, evaluating the nutrient content of food supplies, and planning programs for food distribution. Such tables have been used for almost a century. One of the most comprehensive of these tables is Agriculture Handbook No. 8, "Composition of Foods . . . Raw, Processed, Prepared," published by USDA's Agricultural Research Service.¹

Today, there is increasing need for revising and updating food composition tables because of the greatly increased volume of data. Ideally, as new analytical information on foods becomes available, it should be incorporated promptly into food composition tables. The need for information on food composition has been greatly increased by three developments: critical shortage of world food supplies, qualitative nutritional deficiencies even in populations with adequate food supplies, and nutrient labeling of consumer foods.

The collection of nutrient values and their incorporation into meaningful food composition tables are painstaking tasks, which require meticulous care on the part of the compiler. The work entails not only searching for all available data, but also a critical review of the data to correctly categorize and classify the analyzed food items and to determine whether appropriate analytical methods were employed.

Automated biostatistical computing methods are urgently needed in handling the increasing volume of food composition data. With such methods, not only could calculations be made in a fraction of the time required before, but also other computations could be performed which previously had not been feasible. For example, the data could be tested to determine more rapidly and efficiently the effect of such factors as growing or storage conditions on nutrient content.

The Consumer and Food Economics Institute of the U.S. Department of Agriculture, in cooperation with the Food and Drug Administration, the Canadian Government, and the food industry recently developed a computerized system, Nutrient Data Bank (NDB), for storage and retrieval of analytical data on foods. This Data Bank, intended for both domestic and international use, will serve as an efficient source for developing and updating food composition tables. This paper discusses the method for classifying foods, the coding system for data entry, and the evaluation and summary of analytical data on foods within the computerized system.

¹ Watt, B. K., and Merrill, A. L., 1963. "Composition of Foods—Raw, Processed, Prepared." USDA Handbook No. 8.

FOOD NOMENCLATURE

Accurate identification of a food item is naturally imperative in the development of tables of food composition, but confusion can be created by lack of standardization in nomenclature. A food item for which nutrient data are published may be known to the author by another name than that used by the reader. Therefore, name lists of primary and processed foods have been developed. The list of primary foods includes commonly used names and scientific names for food items. All common names for a particular food are cross-referenced to indicate the preferred or universal name. This list of common and scientific names will be kept up to date as the program develops.

Standardized nomenclature is also used for processed foods. Because brand names are not used in the system, the items are assigned a descriptive term which will encompass a group of similar food items.

Because of the numerous formulated foods and processes used in the preparation of foods for consumption, there is a need for identification of the terms used to describe these foods and processes. A glossary of food terms, some of which are shown as Figure 1, has been established which gives definitions for processes and treatments, parts of foods, stages of maturity, and other terms that may need clarification. The use of a unified terminology lends greater validity to the system, makes the system easier to use, and eliminates confusion caused by large numbers of names and food terms used interchangeably.

FOOD CLASSIFICATION AND IDENTIFICATION

Each entry into the data bank will have a food identification code consisting of two parts. The first part is a four position alphabet code, called the food term, with each position corresponding to a specific level in a four-level food classification hierarchy. Twenty-one major food groups, shown as Figure 2, form the highest level in the hierarchy. These major groups have been divided into major subgroups at the second level, and the major subgroups have been divided into minor subgroups at the third level. Individual foods are designated at level four.

All items within each level have been assigned specific alphabet letters to represent them within the food term code. For example, the code "BLAI" is the food term for blueberry yogurt. B represents the first level or major group which is dairy products; L, the second level—cultured dairy products other than milk or cream; A, the third level—yogurt; and I, the fourth level (that is, the actual food item)—blueberry yogurt.

The second part of the food identification code is used to describe further or modify the food term. It is made up of "qualifying" terms. While each entry into the data bank can have only one food term, it may have up to 32 qualifying terms. These include factors that may be important in evaluating the data, such as type of preserving technique or storage condition. A list of terms that may be used in this capacity has been compiled, arranged into categories (shown as Figure 3), and assigned codes. The first position of the code is an alphabet character and designates the particular category of qualifying terms. Sequential 3-digit numbers are used in the remaining positions.

An example of how the coding system will be used to include qualifying terms is shown in Figure 4 where codes have been developed for Elberta peaches, frozen, sliced, California grown, with sugar and vitamin C added. The food term is "OBKF," with O representing the major food group—fruits; B, the subgroup—stone fruits; K—peach; and F, the variety—Elberta. The other codes represent qualifying terms which designate the preserving technique—frozen; physical state—sliced; production location—California; and added components—sugar and vitamin C.

The structure of the four-position alphabet code for the food term and the alpha-numeric code for the descriptive or qualifying terms offers numerous possibilities for codes. At present, approximately 10,000 food terms and 3,000 qualifying terms have been identified and both parts of the coding system readily allow for expansion.

FIXED DATA ELEMENTS

Information may be recorded for 215 different nutrients and other items relative to food composition, including all nutrients presently recognized as essential, as well as ash, cholesterol, PER, pH, and total solids. A unique 3-digit code identifies each nutrient. For each nutrient for which data are entered, the method of analysis is coded and entered. The method code has been structured to indicate necessary details of the method such as extraction procedure or type of hydrolysis, as well as any modification which has been made to a standard method.

In addition to the food identification code and nutrient information, there are numerous other items about a product which are coded and entered into the system for summary and retrieval purposes. Each data source, whether a journal article, computer tape or printout, personal communication, or data collection form will be assigned a document number. Within a document there may be data for several different food items or just one food which has received various treatments. Each item will receive a different subset number. For example, one document might contain data on the following foods: green beans, canned; green beans, frozen; peas, canned; and broccoli, frozen. These items would receive subset numbers 0001, 0002, 0003, and 0004 respectively. The document number and subset number will specifically identify each item for which data are entered within the system.

Published data will be coded to indicate the source according to the CODEN system.² This system, prepared and maintained by the Science Information Services, provides an abbreviated title for journals and other published documents from which data might be obtained. Included with the CODEN abbreviation will be the year, volume, issue, and page number; these will provide a complete source identification. Unpublished data will receive a reference code to identify the data as being from industry, state experiment station, government, or a university.

Geographic production area will be recorded for each entry of data whenever possible. The Federal Information Processing Standards (FIPS), established by the U.S. Department of Commerce-National Bureau of Standards, have been adopted to code countries and the 50

² Blumenthal, J. G., Ed., 1970. "CODEN—for periodical titles." American Society for Testing and Materials-Science Information Services, Franklin Institute Research Laboratories.

U.S. States.³ Where feasible, provinces or regions within other countries will be coded as well as all major marine areas.

Unit conversion has been built into the system. All data for a given nutrient will be stored within the system in a common or standard unit. For example, preformed vitamin A reported and entered in International Units will be converted to milligrams of retinol. This feature should greatly facilitate the entering of data into the data bank.

EVALUATION AND SUMMARY OF THE FOOD COMPOSITION DATA

Before being coded, the nutrient data will be screened by a nutritionist or a chemist at the Institute for obvious errors in the data presentation, sufficiency of identification of the food, and adequacy of information on processing, sampling, and analytical procedures. In cases where the data are questionable but no further clarification can be obtained, the data will be flagged. The flag will prevent these values from being included in any summaries, but can be removed later if the values are found to be accurate.

After all necessary codes have been assigned to an analysis, the codes along with the nutrient values are transferred to machine readable form and entered into the system. The first program in the system, the update screening and validation program, will check for proper input. It will verify all codes and make cross-reference checks with built-in parameters for nutrient values. For example, it will indicate values which are above or below values that can be reasonably expected. If a unit conversion is needed, it will be performed at this time.

All the individual data with detailed information will not go into data base I (Figure 5). Data base II will be derived from data base I and will contain averaged analyses of identical food items—that is, all food items with matching four digit food codes and matching qualifiers. In addition, some food items which are similar but not identical may be summarized together if there is no significant difference in nutrient content. However, some nutrients in some foods, such as the vitamin C content of Valencia oranges grown in Florida and California, may be statistically different. If so, these items would not be summarized together and data base II would contain nutrient information for both items. Where data permit, statistical tests will be performed to determine what factors influence the nutrient content of foods and where significant differences occur. Data base II will also include the standard error as well as the number of samples and the range of values which comprise the mean. Data base II is expected to be quite extensive and further summary will take place to build data base III. In addition, items will be weighted to reflect food production figures for data base III.

Data base III will be equivalent to a food composition table. Its mean values will be the same as those published as the revised USDA Handbook No. 8. Generally, one item representative of each food consumed in the United States will be present, but when data warrant, values for important subgroups will be included. For example, there may be only one item for flatfish, in which nutrient values for flounder, sole, and dab have been summarized together. While this same type of overall summary may be performed for a fruit, such as apples, the

³ U.S. Department of Commerce/National Bureau of Standards, 1974. "Federal Information Processing Standards" FIPS publication 10-1.

most common cultivars or varieties of apples may remain as individual items. The number of samples, the range of values, and the standard error will also be present.

Data base III is expected to contain about 4,000 food items with far more nutrients than are now listed in the 1963 edition of the revised USDA Handbook No. 8. It will be available on magnetic tape.

The Nutrient Data Bank, with its computerized system for storage and retrieval of data, will greatly increase the present capacity for processing large amounts of food composition data. As part of this data processing system, statistical tests will allow the determination of factors affecting the nutrient content of foods, such as varietal or production differences. With sufficient enlargement of the base, the Nutrient Data Bank will serve as international source of data for different areas and regions of the world.

FIGURE 1

GLOSSARY OF FOOD TERMS

Aseptic canning: Food and container are sterilized separately, then meet at sterile filling units.

Defatted: Having had most of the fat removed.

Germ: In reference to cereals, that part of the grain which gives rise to the new plant.

Ripe: Maximum edible quality of a food product.

Vac-Ice process: Alternative name for freeze-drying, see dehydration.

FIGURE 2

MAJOR FOOD GROUPS

A. Meat (other than poultry).

B. Dairy products.

C. Poultry, reptiles, their eggs; and insects.

D. Fish, shellfish, their eggs and products.

E and F. Mature leguminous seeds, nuts, and other seeds.

G. Sausages and luncheon meats.

H and I. Mixed dishes with animal protein.

J. Soups, broths, meat extracts, and natural meat juices.

K. Processed meals, meal replacements, sandwiches, hot dogs, hamburgers, and other bun-type sandwiches.

L. Cereal grains and their milled products.

M. Bakery products.

N. Vegetables and vegetable products.

O. Fruits and fruit products.

P. Mixed dishes, dessert type (other than bakery and fruit products).

Q. Sugars, syrups, icings, baking chocolates, and cocoa.

R. Processed fats, oils, and salad dressings.

S. Beverages.

T. Seasonings and condiments.

U. Leavening agents and additives.

V. Baby foods.

W. Simulated products (fabricated foods).

FIGURE 3

QUALIFYING TERMS

- A. Treatment applied.
- B. Preserving technique.
- C. Processing technique.
- D. Cooking method.
- E. Physical state.
- F. Portion analyzed.
- G. Packaging and storage conditions.
- H. Grade, quality, appearance, size and color.
- I. Maturity and conditions of growth and production.
- J. Special descriptors.
- L. Category or varietal type.
- N-R. Components of mixed dishes.

FIGURE 4

FOOD IDENTIFICATION CODE

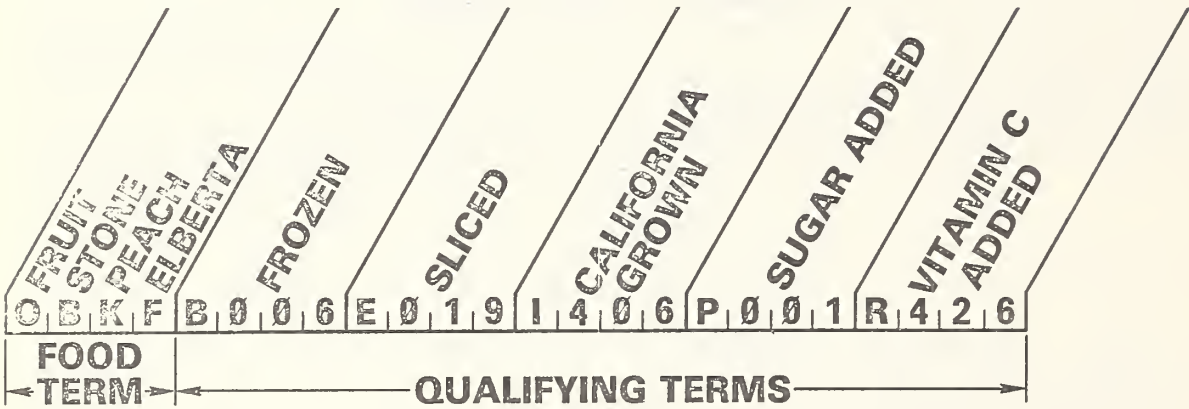
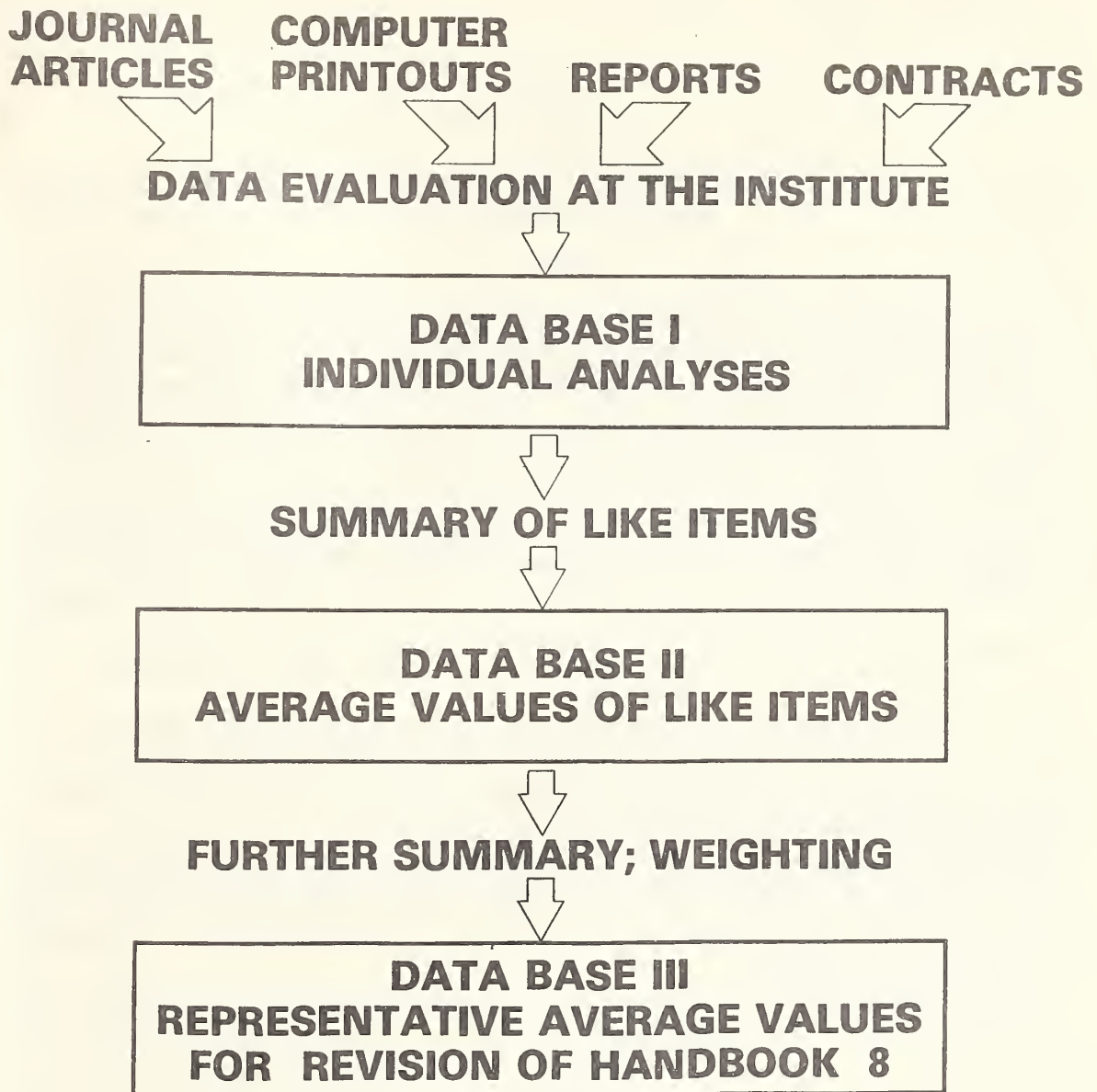


FIGURE 5



CONVENIENCE FOODS—1975 COST UPDATE

[By Larry G. Traub, Economic Research Service and Dianne Odland, Agricultural Research Service, USDA]

With food prices increasing, with real incomes not improving appreciably, with rising awareness of good nutrition, with more social and work demands on the housewife, and with food processing firms continually introducing new products on the market, the homemaker's decision on what foods to buy for her family has become very complex. One such decision is whether to buy the convenience food form or to prepare the dish from scratch. The purpose of this paper is to provide information on the cost differential between selected convenience or proposed food forms and their home-prepared or fresh counterpart.

DEFINITION AND CHARACTERISTICS OF CONVENIENCE FOODS

First, let's discuss the characteristics and the meaning of the term "convenience foods." In 1963, USDA's Economic Research Service defined them as foods which have services added to basic ingredients to reduce the preparation required in the home (3).

Some have argued that this is a definition of prepared foods, while others interpret it to include items that are standard in today's diet such as frozen orange juice concentrate, frozen french fries, or canned and frozen vegetables.

Webster defines "convenience" as "service conducive to comfort." If convenience foods are considered within this framework, then many foods are in the convenience category. Canned green beans are a convenience food when compared to fresh green beans because the beans have been washed, snapped, cut and cooked. This product typifies a class of convenience food with built-in maid service. Even more convenience is built into frozen green bean casserole and other new products like frozen sweet and sour pork or frozen shrimp newburg which reflect convenience with built-in chef service.

Convenience can be associated with less preparation time or at least change in the preparation activities in the consumer's kitchen. Ease in storage, change in storage space requirements, and ease of transporting the food from the market to the home base of lighter weight or reduced bulk may also be considered as factors conducive to comfort.

Perhaps the convenience distinction could be based on newness of the food product and its related processes. Using this basis, we may define convenience foods as those recently introduced and processed by new technologies. Some refer to these products as "new generation" convenience foods.

The definition of convenience food for this report is "any fully or partially prepared food in which significant preparation time, culinary

skills, or energy inputs have been transferred from the homemaker's kitchen to the food processor and distributor." Products introduced prior to 1960 will be referred to as "established" convenience foods while those introduced during the past 15 years will be referred to as "new generation" convenience foods.

CONSUMPTION OF CONVENIENCE FOODS

Because of factors such as rising real incomes, value of homemaker's time, and desire for leisure, the consumption of some categories of convenience foods has been increasing. For example, frozen vegetables offered in bulk bags and pouches, garnished with sauces and creams, or combined with another vegetable or food, have helped increase the per capita consumption of frozen vegetables, on a fresh weight basis, from 15.4 pounds in 1963 to 21.9 pounds in 1973—a rise of over 40 percent. Frozen french fried potatoes have helped increase the per capita consumption of frozen potatoes by more than 300 percent. Dry-mix potato casserole dishes, introduced in the early 1960's, have increased per capita consumption of dehydrated potatoes from 5.1 pounds in 1963 to 12.8 pounds ten years later, an increase greater than 150 percent. In comparison, per capita food consumption increased by 5.6 percent from 1963 to 1973.

CONSUMER CONCERNS ABOUT CONVENIENCE FOODS

Although sales of convenience foods have grown, consumers and their advocates have some serious reservations about them. Some of their questions are: If a convenience food costs more than a similar home-prepared product, how much more? Is the convenience worth the added cost? How much time does the convenience product save? How does it compare in eating quality? Also, now that fuel consumption is an important consideration, does the convenience product save fuel compared with a home-prepared item?

PREVIOUS WORK

An extensive cooperative study on convenience foods was undertaken in the late 1950's by the Economic Research Service (ERS) and the Agricultural Research Service (ARS) of the U.S. Department of Agriculture. The study included foods in fresh, canned, dried, and frozen forms, representing several food categories including meat, fish, poultry, cheese, baked goods, desserts, vegetables, and fruits. A total of 247 items was studied. Cost, comparative yield, nutritive value, quality, and preparation time of convenience foods and their home-prepared counterparts were studied and the results reported in a series of publications (1, 2, 3, 4, 6, 7) which appeared in the 1960's.

In determining the cost of convenience products and their home-prepared counterpart, prices of convenience items and ingredients for home recipes were collected over a 1-year period (May 1959 to April 1960) from major food chain stores in four regions of the United States—Philadelphia, Milwaukee, Oakland, and New Orleans. Average cost per serving figures showed that 116 out of the 158 convenience

foods studied were more expensive than their home-prepared counterpart. These findings demonstrate the need for consumers to be selective in choosing from the convenience items available for purchase if lower food costs are to be achieved.

CURRENT STUDY

Food and fuel prices have risen substantially, value of homemaker's time has increased, and a number of "new generation" convenience products has been introduced to the market since the previous study. Therefore, ERS and ARS have conducted a study to evaluate cost, volume of sales, home preparation time and use of fuel, and eating quality of selected convenience foods and their home-prepared counterpart. Only ingredient cost information will be presented in this paper. Procedures and results of the other phases of the study will be reported at a later date.

Costs were computed for 295 foods. One hundred seven were either home-prepared or fresh foods. One hundred eighty-eight were convenience foods of which 162 have a home-prepared or fresh counterpart. Forty-three "new generation" convenience foods, which were not on the market in 1960, were also studied.

LABORATORY PROCEDURES

Fifty-one food items tested in 1960 were retested in the laboratory to determine differences in total yield and proportion of major ingredients since the previous study. In addition, laboratory tests were made for 36 "new generation" convenience foods and for several other products not previously tested. In most instances, home-prepared counterparts were also studied. Three tests were conducted for each product.

Convenience products were prepared according to package directions and each home-prepared item according to a recipe which, whenever possible, was formulated to contain the same types of ingredients as the corresponding convenience item. For example, if the ingredient label of a convenience food specified that it contained butter rather than margarine, then butter was used in the home-prepared food. Home-prepared items initially tested in 1960 were prepared using the same recipe as in the earlier study.

One market brand and container size of each convenience food available at a retail food store in the Washington, D.C., metropolitan area were tested. In cases where more than one brand or size was available, a nationally advertised brand of medium price and container size was selected for study. Food containers for the selected brand were chosen randomly from the grocery shelves. All foods requiring refrigeration were stored at 38°F, frozen items at 0°F, and canned goods at room temperature.

Finished products were weighed to the nearest gram and then grams converted to ounces. The number of servings per recipe for the home-prepared product or per market unit for the corresponding convenience item was calculated on the basis of equal weight servings.

Individual components of the prepared convenience products were weighed, except in instances where small particle size or consistency of the food did not permit separation of ingredients. For example, in the testing of pizza, tomato sauce and cheese could be separated from the crust but could not be separated accurately from each other. Components in the products were weighted to permit comparison between the quantity of the most costly ingredients such as the amount of shrimp in shrimp newburg.

The cost of each ingredient used in home-prepared products was based on the actual amount of food required. For example, in a recipe which required two cups of cooked diced chicken, the weight of raw chicken which must be cooked in order to obtain this amount was used for costing purposes. Vegetables which must be trimmed or pared or canned ingredients which must be drained before use are other examples of foods for which yield must be considered. In order to allow for differences due to such factors as variety, geographic location, season, container size, and brand of ingredients consumers commonly use in recipes, current data on food yields (5) were used in reporting the amount of food ingredients required for purchase. Because these data are average figures based on many samples, it is believed that this manner of reporting the "as purchased" weights of ingredients gives a more accurate representation than could be calculated using figures obtained in only three tests.

COST PROCEDURES

ERS collected price data for national and regional volume brand movers and non-brands (store brands, private labels, and contract labels) over 12 months (July 1974 through June 1975) from leading food retail chain stores in Philadelphia, Milwaukee, Oakland, and New Orleans. The initial step in computing costs was to weight each monthly price per ounce for brand and chain store effects. The brand effect is the ratio of brand food and non-brand food sales to their total sales. To compute the brand effect when both a brand and non-brand food product were sold by a given chain in a given city for a given month, the price of the volume brand mover was weighted (multiplied) by .82; the price of the non-brand was weighted by .18; and the two prices summed. These weights were provided by the National Association of Food Chains. The weights assume no difference in brand effect ratios among products. Although brand effect ratios differ among products, unfortunately, no data were available to compute unique brand effect ratios for each product.

The chain store effect is the ratio of food sales of an individual chain store relative to sales of all participating chain stores that sold the product in the market. To compute the chain store effect for each city during a given month, the price of a product at each chain store was weighted by its respective chain store ratio. The weighted prices for each chain store were then summed. The sales data for computing chain store ratios were from the 1975 Grocery Distribution Guide, Metro Market Studies, Inc.

The second step in computing costs was to multiply the weighted price per ounce by the number of ounces of the convenience form, or by the number of ounces of the ingredients in the home-prepared formulation for the months in the given city that all ingredients were available to prepare the food. Whenever possible, the most costly ingredient(s) was(were) held in the same proportion to all ingredients in the home-prepared recipe as was found in the convenience counterpart. Finally, costs were totaled and were divided by the number of servings of the food product. The result was a comparative cost for equivalent weight servings.

COST COMPARISONS

The cost of convenience is often a factor in the consumer's decision to buy a convenience food or to prepare the product from scratch. Consumers, however, may also want to consider factors such as nutritive value, family preferences, culinary skills, and time and equipment available for food preparation. All data presented in this paper are based on ingredient costs only. Unless otherwise indicated, results are average cost per serving figures computed from prices collected in 4 cities for 12 months.

Of the 162 convenience foods studied, only 36 percent had a cost per serving lower than their home-prepared or fresh counterpart. Only 8 of 43 "new generation" convenience foods were less expensive than similar products prepared from home recipes.

Vegetables: Of the 37 convenience vegetable products studied, 16 had a cost advantage over their fresh or home-prepared counterpart. These products were canned or frozen single ingredient items which are commonly used in today's diet, e.g., green peas, cut corn, and spinach. Included in this group was a "new generation" convenience product: green beans, individually quick-frozen and packaged in a bulk bag. Products prepared from dehydrated potatoes and frozen vegetable side dishes were more expensive than similar products prepared from scratch. But frozen french fried potatoes were less expensive than french fries prepared from fresh potatoes. Of the 6 vegetable products which were available both frozen and canned, 5 were cheaper in frozen form. Frozen au gratin potatoes, however, were more than twice as expensive as the dehydrated product.

Based on quarterly cost data, fresh asparagus spears, brussels sprouts and corn were a better buy during their growing season than in their frozen or canned forms.

Fruits and Berries: Sixty-one percent of the convenience fruit and berry products had a higher cost than their fresh counterpart. Reconstituted frozen orange juice concentrate was cheaper than fresh, canned or bottled orange juice, regardless of season. Six canned fruits and berries had a lower cost than their fresh form. However, canned red sour cherries were more expensive than fresh sour cherries during their growing season, but only in cities near cherry orchards. Canned strained cranberry sauce was also less expensive than its home-prepared counterpart, but this relationship existed because sugar, the most expensive ingredient in making it at home, was at its peak price during the cranberry season. All fruits and berries available both

frozen and canned were cheaper in the frozen form, except for raspberries and peaches. When fresh strawberries were not available, frozen strawberries in a bulk bag were the next best buy. Frozen sliced strawberries were less expensive in a thaw-and-serve pouch than in a carton, even though packaging in a pouch is usually more costly. Aseptically canned peaches cost 7 cents per serving more than regular canned peaches. Orange drink made from reconstituted frozen concentrate was found to be cheaper than that made from reconstituted crystals.

Beef, Poultry, and Pork: All frozen beef entrees and dinners and two skillet main dishes made from mixes were more expensive than their respective home-prepared counterpart (table 1). Beef patties with soy protein were less expensive when soy was added to ground beef at the grocery store rather than at home. The reason is grocery stores buy soy protein from soy processors at wholesale for about 2 cents to 3 cents per ounce, while the retail price for soy protein is over 13 cents per ounce. Both forms of soy protein beef patties were cheaper than plain beef patties. The ingredients to prepare sloppy joe

TABLE 1.—COST COMPARISON OF HOME PREPARED OR FRESH BEEF, CHICKEN, TURKEY, AND PORK PRODUCT WITH CONVENIENCE COUNTERPARTS, 4-CITY AVERAGE, JULY 1974 TO JUNE 1975

[Cents per serving]

Product	Home prepared or fresh	Frozen	Canned	Skillet main dish mix	Other
Beef:					
Chili-macaroni, skillet main dish (9.21) ¹	27.79			30.41	
Dinner (11.00)	51.31	78.88			
Lasagne (9.80)	52.42	² 84.07			
Lasagne, skillet main dish (8.69)	35.33			² 26.20	
Patties (2.67)	21.11	28.08			
Patties, soy protein added (2.67)	³ 17.18				^{2 4} 14.95
Pie (8.00)	20.70	39.63			
Sloppy joe sandwich sauce (2.76)	11.11		² 17.02		
Stew (8.60)	21.34		33.70		
Stroganoff, skillet main dish (7.96)	45.90			² 47.41	
Meat loaf dinner (9.07)	41.32	70.16			
Chicken:					
A-la-king (5.73)	21.86	² 36.43			
Braised whole (2.00)	24.74		25.75		
Chow mein (6.60)	39.13	54.32	32.80		
Fried (2.00)	⁵ 22.62				
	⁶ 25.12				
Batter dipped, deep fat fried (2.00)	12.43	39.30			
Meat (1.50)	10.37		31.39		
Pie (7.70)	29.28	35.63			
Salad, sandwich spread (2.52)	18.75		² 32.89		
Fried, dinner (10.07)	39.94	62.70			
Turkey:					
Dinner (12.50)	29.53	71.26			
Tetrazzini (8.07)	41.50	² 78.57			
Pork:					
Ham (2.00)			30.60		⁷ 28.92
Sweet and sour (5.98)	31.94	² 52.27			^{2 8} 58.99
Sausage (2.0)	⁹ 29.52	28.31	30.91		
	¹⁰ 38.44				

¹ Weight of serving in ounces.

² New generation convenience food.

³ Soy protein mixed with ground beef at home.

⁴ Soy protein mixed with ground beef at grocery store.

⁵ From cut-up fryers.

⁶ From whole fryers.

⁷ Fully cooked.

⁸ Packaged combination.

⁹ Bulk.

¹⁰ Linked.

sauce or beef stew cost about two-thirds as much as the canned products.

Eight of the nine chicken convenience products were more costly than similar products prepared from fresh chicken. The cost of home-prepared batter dipped chicken and chicken meat from whole fryers was less than one-third that of the convenience products. Both chicken a-la-king frozen in a pouch and canned chicken salad spread, two "new generation" convenience foods, were about 60 percent more expensive per serving than their respective counterpart.

Consumers paid approximately 40 cents more per serving for frozen turkey dinner or tetrazzini than for the separate ingredients to prepare these dishes at home. Consumers were also paying a premium for sweet and sour pork, whether in frozen form or in a packaged combination.

Baked Goods, Desserts, and Candy: Nearly all of the frozen, chilled, or ready-to-serve baked goods, desserts, and candy were more expensive than either preparing them from recipes or mixes (table 2). Better than one-half of the products made from a complete mix were less expensive than their home-prepared counterpart. Frozen pancakes and waffles cost approximately 3 times as much as pancakes

TABLE 2.—COST COMPARISON OF HOME-PREPARED BAKED GOODS, DESSERTS, AND CANDY WITH CONVENIENCE COUNTERPARTS, 4-CITY AVERAGE, JULY 1974 TO JUNE 1975

[Cents per serving]

Product	Home pre- pared	Frozen	Ready to serve	Chilled	Com- plete mix ¹	Incom- plete mix ²	Other
Baked goods:							
Baking powder biscuits (1.40) ³	2. 69			4. 04	3. 08		
Bread stuffing, range top (2.12)	7. 26					⁴ 5. 37	
Brownies (0.70)	4. 91	6. 30	5. 87		4. 19	4. 54	
Angel food cake (1.70)	⁵ 7. 29		13. 20		7. 98		
Bundt cake (4.10)	15. 28					⁴ 15. 76	
Devils food cake (1.70)	7. 92	13. 09	12. 19			5. 45	
Poundcake	4. 09					4. 27	
Yellow cake (1.20)	4. 91					4. 19	
Sugar cookies (0.50)	2. 20		2. 55	2. 86			
Corn muffins (1.50)	3. 82					3. 37	
Chocolate frosting (0.87)	5. 53				4. 52		
White frosting (0.52)	⁵ 3. 30				2. 16		
Pancakes (5.30)	11. 15	34. 40			7. 31	13. 13	
Apple pie (4.70)	12. 52	20. 46	24. 01		17. 70	16. 68	
Cherry pie (4.50)	16. 63	22. 42	24. 24		18. 63		
Coconut cream pie (5.00)	13. 42	21. 07	24. 40		19. 13	⁵ 14. 04	
Yeast rolls (1.30)	2. 39	3. 28	6. 22		3. 55		⁶ 6. 93
Waffles (3.30)	6. 62	18. 47			4. 03	7. 06	
Desserts and candy:							
Fudge, chocolate (0.40)	1. 75		3. 27				
Pudding, chocolate (4.60)	11. 73		⁷ 17. 12		⁸ 9. 87		
					⁹ 9. 24		
Sherbert, orange (3.20)	6. 38		7. 31				

¹ Requires only milk or water and sometimes additional flavoring ingredient(s) such as vanilla.

² Requires eggs and other ingredients in addition to the water or milk needed for every dry mix.

³ Weight of serving in ounces.

⁴ New generation convenience food.

⁵ Based on cost of egg whites only.

⁶ Brown and serve.

⁷ Canned.

⁸ Cooked.

⁹ Instant.

and waffles made from a home recipe and nearly 5 times as much as those made from a complete mix.

Dairy Products: Very small price differences were found among forms of American cheese: loaf, sliced, or individually wrapped (table 3). The cost of American cheese food in an aerosol can was almost 3 times greater than cheese food in a loaf. Margarine in a tub cost about the same as in a squeeze bottle and both forms were higher in price than stick margarine; however, they were less expensive than either bulk or quartered butter. Scrambled eggs prepared from a frozen "cholesterol-free" egg product were almost twice as expensive as scrambled fresh eggs. Higher cost of this convenience product, however, may be of little significance to those purchasing it for dietary reasons.

TABLE 3.—COST COMPARISON OF HOME PREPARED OR FRESH DAIRY PRODUCTS WITH CONVENIENCE COUNTERPARTS, 4-CITY AVERAGE, JUNE 1974 TO JULY 1975

[Cents per serving]

Product	Home prepared or fresh	Frozen	Quartered	Loaf	Other
American cheese (2.0) ¹				16.53	³ 16.82
American cheese food (2.0).....				12.27	^{2 4} 16.75
Butter (0.33).....			1.94		^{2 5} 37.73
Cream, whipping (1.00).....	6.60				⁶ 1.86
Cheese, fondue (2.72).....	28.95				⁵ 8.60
Eggs, scrambled (4.10).....	14.67	² 26.07			^{2 7} 33.55
Margarine (0.33).....			1.41		^{2 8} 1.63
Milk, nonfat (8.47).....	9.13				^{2 9} 1.68
					¹⁰ 5.83

¹ Weight of serving in ounces.

² New generation convenience food.

³ Sliced.

⁴ Singles (individually wrapped).

⁵ Aerosol can.

⁶ Bulk.

⁷ Chilled.

⁸ Soft, tub.

⁹ Liquid, squeeze bottle.

¹⁰ Dry.

Pizza, Rice, Spaghetti, Soup, and Baby Food: Frozen and chilled cheese pizzas were about 60 percent more expensive than both home-prepared and packaged combination cheese pizzas (table 4). Buying canned or packaged combination spaghetti was less costly than preparing spaghetti from scratch, mainly because less expensive cheeses were used in manufacturing the convenience products, while parmesan cheese was used in making spaghetti at home. A serving of reconstituted condensed split-pea soup was considerably cheaper than soup from other processed forms. Baby foods prepared from fresh or canned peaches or peas were more costly than their commercial counterparts because other ingredients added during processing lower the manufacturer's per unit cost.

TABLE 4.—COST COMPARISON OF HOME PREPARED OR FRESH PIZZA, RICE, SPAGHETTI, SOUP, AND BABY FOOD PRODUCTS WITH CONVENIENCE COUNTERPARTS, 4-CITY AVERAGE, JUNE 1974 TO JULY 1975

[Cents per serving]

Product	Home prepared or fresh	Frozen	Canned	Packaged combination	Chilled	Other
Pizza, rice and spaghetti:						
Pizza, cheese (8.30) ¹	37.31	61.89		37.81	58.38	
		² 126.91				
Rice, cooked (3.35)	2.89					⁴ 4.35
						⁵ 5.08
Spanish rice (4.46)	12.43		10.94	10.30		
Fried rice (2.85)	13.19	25.33				
Spaghetti (8.37)	22.23		15.89	15.87		
Soups:						
Split pea (8.48)		38.39	⁶ 10.92			² 15.81
			² 27.59			
Baby food:						
Liver, beef (3.50)	29.29		34.03			
Peas (4.75)	45.33		16.16			
	⁹ 19.04					
	18.76		15.27			
Peaches (4.75)	¹⁰ 21.86					

¹ Weight of serving in ounces.² New generation convenience food.³ Frozen appetizer pizza.⁴ Parboiled.⁵ Precooked.⁶ Condensed.⁷ Ready to heat.⁸ Dried, individually packaged servings (green pea).⁹ Prepared from canned peas.¹⁰ Prepared from canned peaches.

Fish and Shellfish: Frozen fish sticks and crabcakes were less expensive, but frozen haddock dinner, tuna noodle casserole, and shrimp newburg in a pouch were considerably more expensive than these products prepared at home (table 5). Three of eight convenience shrimp products had a lower cost per serving than their home-prepared counterpart—frozen fried shrimp processed from diced, reformulated bits of shrimp meat and frozen and canned cooked shrimp.

TABLE 5.—COST COMPARISON OF HOME-PREPARED FISH AND SHELLFISH PRODUCTS WITH CONVENIENCE COUNTERPARTS, 4-CITY AVERAGE, JUNE 1974 TO JULY 1975

[Cents per serving]

Product	Home prepared	Frozen	Canned	Skillet main dish mix
Fish:				
Pollock fish sticks (2.60) ¹	34.02	22.43		
Haddock dinner (11.54)	55.53	99.96		
Tuna noodle casserole (7.78)	26.17	² 67.37		² 23.16
Shellfish:				
Crabcakes (2.80)	60.36	52.25		
Crab—deviled (3.11)	29.45	39.57		
Shrimp, cooked (2.14)	61.20	50.39	50.07	
Shrimp, fried (2.56)	39.74	³ 44.74		
		⁴ 41.65		
		⁵ 44.10		
		² 35.94		
Shrimp, newburg (4.20)	68.88	² 112.77		
Shrimp, creole (7.46)	38.48	59.79		

¹ Weight of serving in ounces.² New generation convenience food.³ Partly prepared, cooked.⁴ Partly prepared, breaded.⁵ Prefried.⁶ Diced and extruded, breaded.

Coffee and Tea : Coffee made from instant coffee and tea made from tea leaves were less expensive than all other forms in their beverage category (table 6). Lemon flavored tea in a ready-to-drink can, a product which competes with canned and bottled soft drinks, was over 11 cents for a six-ounce serving.

TABLE 6.—COST COMPARISON OF ALTERNATIVE FORMS OF COFFEE AND TEA, 4-CITY AVERAGE,
JUNE 1974 TO JULY 1975

[Cents per serving]

Product	Roasted, regular grind	Leaves	Bags	Instant	Freeze dried	Ready to drink
Coffee (6.00) ¹ -----	2.34-----			1.07	² 2.40-----	
Tea (6.00)-----		0.72	1.57	1.20		^{2 3} 11.27
				^{2 3} 1.01		

¹ Size of serving in fluid ounces.

² New generation convenience food.

³ Lemon flavored.

COST-DECREASING ITEMS

Even though food production and marketing costs have continued to rise, six convenience products did become less costly by at least 1 cent per serving from the first quarter (July through September 1974) to the last quarter (April through June 1975) of the study. In order of decreasing savings, they were: shrimp newburg frozen in a pouch, frozen beef dinner, frozen partly prepared fried shrimp, canned chicken meat, frozen peaches, and frozen partly prepared cooked shrimp. Excluding seasonally produced fruits and vegetables, none of the home-prepared or fresh foods were less expensive by 1 cent per serving from the first to the last quarter of the study.

SUMMARY

(1) Only 36 percent of the convenience foods studied had a cost per serving advantage over their home-prepared or fresh counterpart.

(2) Over 80 percent of the "new generation" convenience foods were more expensive than preparing them from basic ingredients.

(3) Of the 37 vegetable convenience products, single ingredient items in the canned or frozen form were cheaper than their fresh or home-prepared counterpart. Still, six of these 16 processed vegetables were more expensive than their fresh form during the fresh vegetable's growing season.

(4) Frozen orange juice concentrate was the best orange juice buy.

(5) For consumers desiring to save money by the addition of soy protein to ground beef patties, soy protein added to ground beef at the grocery store was found to render the most savings.

(6) No home-prepared foods and only 6 convenience foods decreased in cost from the first quarter to the last quarter of the survey.

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CONSUMERS' KNOWLEDGE, OPINIONS, AND ATTITUDES TOWARD SAFETY IN SELECTED FOOD ITEMS

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Federal and State inspection laws have been designed to assure the consumer that food products are wholesome and properly labeled, thus helping to guard against foodborne illness caused by bacteria or insanitary processing. Nevertheless, the incidence of foodborne illness continues to be of great concern. The U.S. Public Health Service reported 23,448 cases of microbial food poisoning in 1970,¹ but most food-related illnesses are probably not reported and estimates range from 2 to 10 million cases per year. The three leading types of illness were staphylococcal food poisoning, clostridium perfringens food poisoning, and salmonellosis. A sizable proportion of the reported cases of foodborne illnesses have been traced to foods prepared or eaten in the home. At present, insanitary food handling practices are among the weakest links in the chain of food protection in the United States. Interest generated by Congress, public health services, and other concerned groups has resulted in an intensified effort to plan consumer education programs. To facilitate these programs, a survey to evaluate consumer awareness of and attitudes toward food safety practices in the home was deemed necessary to provide essential guides for planning. Similarly, such a study would aid in identifying those groups of people having the greatest need for food safety information.

Before delving into specific results obtained from the survey, we would like to give you a little background on how the survey was conducted and why we designed the questionnaire in the manner that we did. The survey was conducted during the summer of 1974. Data was collected via personal interview from approximately 2,200 homemakers. Selection of respondents was based on probability sampling procedures so that we could be assured that the people we interviewed were fairly representative of all homeowners within the continental United States.

In the survey we sought two general types of information from the homemaker: "behavioral" that is what she actually does in the kitchen, and "awareness"—her opinions, ideas and knowledge concerning specific food safety practices and principles. Ideally, to assess accurately what a homemaker does in the kitchen we should use a "candid camera" operation. Obviously, this method was impossible so we had to rely on the homemaker's verbal replies to our questions.

In the first half of our questionnaire we investigated the homemaker's behavior with regard to how she went about preparing and

¹ "Foodborne Outbreaks—Annual Summary," 1970, Center for Disease Control.

storing a number of food products. We tried not to give her an indication of our primary interest in food safety, but simply said we were interested in how consumers like herself fixed food. To give her a proper time frame, we asked her to think about the last time she cooked a specific food product, and we then proceeded to ask her a series of questions about her behavior when she prepared that product. A gamut of behavioral questions were asked about beef roast, pork roast, turkey, chicken, hamburger patties, and salad sandwiches—food products which are commonly incriminated as sources of food poisoning. The second half of the questionnaire dealt with the homemaker's opinions and knowledge on a variety for food safety principles and issues.

Constructing the questionnaire in this manner allowed us to classify respondents beyond the traditional demographic indices such as age, education, and income. Based on their answers to a select number of these "behavioral" and "awareness" questions, homemakers were grouped as to whether their behavior in preparing and storing food constitutes a high or low risk of spawning foodborne illness in the household. In our classification system, a household is considered to be "high risk" if the homemaker does one or more of the following "bad" practices:

Cooked hamburgers rare.....	1
Left cooked meat and poultry at room temperature for more than 2 hours.....	¹ 4
Left poultry, egg, or fish salad sandwiches at room temperature for more than 2 hours.....	1
Kept meat or poultry leftovers in the refrigerator where the temperature was above 45°F.....	¹ 4
Stuffed a turkey a day or more in advance of roasting it.....	1
Cooked a turkey partially at one time and completed the cooking at another time.....	1
Stored leftover stuffing in a turkey.....	1
Total number of behavioral practices.....	13

¹ One each for beef roast, pork roast, chicken, and turkey.

The fact that households are designated as "high risk" for committing any of the aforementioned behavioral practices does not mean, of course, that members of such households would inevitably suffer from foodborne illness. Rather, such households may be judged more vulnerable to an incidence of foodborne illness than they would be if none of these practices were followed. On the basis of these criteria, almost two-thirds (63 percent) of the households sampled would be classified as "high risk."

The demographic profile revealed that older homemakers (65 and older) homemakers with grade school education only, from households with low incomes, and residing in rural areas are less likely than corresponding subgroups to represent "high risk" households. Homemakers from these small and often low-income families are not as apt to serve a whole turkey or beef and pork roasts. Therefore, the number of behavior practices on which they might be found guilty are reduced—as is the risk of foodborne illness.

Of the "high risk" homemakers, 86 percent were classified as such solely because they left cooked meat or salad sandwiches at room temperature for more than 2 hours. For this reason perhaps the main focus of future consumer education programs should be to warn

homemakers of the danger inherent in holding susceptible foods at room temperature.

Homemakers were also grouped on their awareness of specific food safety facts. To be considered knowledgeable a homemaker must be cognizant of the risk of cross-contamination and be aware that leaving cooked meat at room temperature for over 2 hours is a dangerous practice. Seventy-eight percent of the homemakers sampled were classified "unware" of important food safety principles because:

They would not wash hands, utensils, and working surfaces with soap and water after cutting up fresh meat and before chopping vegetables to be eaten raw—67 percent.

They would be "not too concerned" or "not concerned at all" about cooked meat or poultry standing at room temperature for 2 to 3 hours—47 percent.

You will remember that 63 percent of the homemakers surveyed practiced "high risk" behavior in the kitchen increasing their vulnerability to an incidence of foodborne illness and 78 percent were "unaware" of major food safety rules. The matrix below further classifies homemakers into one of four risk/awareness categories.

	Awareness		Total
	Aware	Unaware	
Risk:			
Low risk (percent).....	9	28	37
High risk (percent).....	13	50	63
	22	78	

The challenge to educators is clear. Those "perfect" individuals whose sound knowledge of food safety principles and concepts is reflected in their behavior in the kitchen constitute only 9 percent of the homemakers sampled. We do not have to be too concerned about an additional 28 percent who seemingly do the right thing without knowing why (perhaps they are following the way their mothers taught them). It may be difficult to effect any change in the behavior of the 13 percent who are knowledgeable about food safety principles but who proceed to actually practice unsafe procedures. We probably know people like this—they know better, but they continue a practice nevertheless—perhaps they have never been ill or have "gotten away" with a procedure that is less than safe. An education program should be most effective in the case of the largest group—50 percent (literally millions of homemakers)—who, not aware of certain food safety principles, misbehave in the kitchen and thereby subject their families to increased risk.

In the time remaining we would like to summarize some of the results from a few of the "behavior" and "awareness" questions.

First—let's talk turkey. This is a food product of which the preparation probably provides more opportunity for making errors than any of the other foods we investigated. In this survey, 60 percent of the homemakers interviewed claimed to have prepared a whole turkey in the 12-month period prior to interviewing. A majority of the homemakers who prepared turkey also cooked stuffing with it. Now, as you are probably aware, salmonella bacteria are commonly found in fresh poultry and red meat. When a fresh turkey is stuffed, the salmonella

from the turkey may be transferred to the stuffing. Therefore, for *absolute* safety, stuffing or dressing should be cooked in a separate container. However, most homemakers do not do this—only 26 percent of the homemakers who prepared stuffing cooked all of it in a separate container. We would emphasize that cooking stuffing in the turkey is not necessarily bad—as evidenced in our survey and by casual observation, it is obvious most people prefer to cook stuffing in the turkey. Perhaps they feel the stuffing has a better flavor cooked this way. However, if the homemaker insists on cooking stuffing inside the turkey, it is imperative that the stuffing be thoroughly cooked. In the cavity of the turkey, it takes longer for the stuffing to be sufficiently cooked (it should reach a temperature of at least 165° F. during roasting). Just because the outer surface of the turkey appears to be done does not necessarily indicate the stuffing is safely done too. A majority of the homemakers (67 percent) when asked how they knew the stuffing was done replied that “when the turkey is done, the stuffing is done.” The risk of cooking the stuffing in the turkey may be further compounded when the stuffing is packed tightly. This practice does not allow the oven heat to penetrate as quickly. However, 40 percent of the homemakers who stuffed their turkeys packed the turkey tightly. (Younger homemakers and homemakers with lower levels of education were more inclined to do this.) To the homemakers’ credit, only a small proportion of them (6 percent) indicated they stuffed the turkey a day or more prior to roasting. Advance stuffing of the turkey, of course, would allow time for salmonella bacteria to multiply rapidly.

As indicated earlier in this report, leaving cooked meat/poultry products out at room temperature for more than 2 hours was considered a high risk practice. Approximately 37 percent of the homemakers who prepared turkey indicated that they left their turkey out for 2 hours or more (homemakers from the South were more likely to do this). As you people are probably aware, temperature and time influence the growth of bacteria including salmonella. Like other living things, bacteria need food, warmth, moisture, and time to grow and multiply. A standard rule, recommended by the U.S. Department of Agriculture, is that *hot* foods should be kept hot (about 140° F.) and *cold* foods cold (below 40° F.). Particularly, food may not be safe to eat if held for more than 2 to 3 hours at temperature between 60° and 120° F., the zone where bacteria grows most rapidly and the zone within which “room temperature” is traditionally thought to be.

The reported percentage—37 percent—who left turkey out at room temperature 2 hours or more is probably conservative, since our survey focused essentially on the first meal homemakers had with the turkey. Ninety-three percent of the homemakers who prepared turkey indicated they had turkey left over from the initial meal. However, we did not attempt to examine homemakers’ behavior with every subsequent meal they may have had with leftover turkey (or for that matter, with any other food we investigated). A homemaker’s behavior with leftover turkey and any accompanying stuffing and gravy, however, is critical. The time period (2–3 hours) at room temperature, beyond which bacterial growth may have reached dangerous levels can be obtained cumulatively. Thus, refrigerating or freezing cooked poultry (or gravy) may inhibit the increase of salmonella, but any

already on the poultry will remain alive and will increase when the poultry is put back into the danger temperature zone. Of course, this leftover poultry (or gravy) can be put back into this danger zone by merely "heating up" this food. It was found in this survey, for example, that 41 percent of the homemakers who claimed to have served leftover gravy, cooked it so that it was merely warm or hot—not simmering or boiling as it should have been to destroy bacteria. It is also recommended that leftover stuffing, that which is initially cooked in the turkey, be stored separately, *not* in the turkey as this might permit bacteria from the turkey to contaminate the stuffing. It was found that 10 percent of those respondents who cooked the stuffing in the turkey and had leftover stuffing did not remove the leftover stuffing before returning the leftovers to the refrigerator.

We covered a number of other topics in the questionnaire, which we don't have time to discuss in detail today, but we would like to touch on a few other results that may be of interest to you. Current government inspection procedures do not include provisions for testing for the presence of salmonella on fresh meat and poultry products. Evidently, some homemakers are unaware that absolute protection is not always attainable. Homemakers in this survey were asked how likely it was for meat and poultry, most of which are government inspected, to carry harmful bacteria or germs. Approximately 63 percent of the respondents thought it was "not too likely" or "not at all likely" for meat and poultry to possess such harmful bacteria. As mentioned earlier in this paper, approximately two-thirds of the homemakers appeared oblivious to potential health problems associated with the handling of raw meat and poultry when they prepare these items in conjunction with other foods—in other words, the problem of cross-contamination. Thus, it appears that homemakers may underrate the individual responsibility for hygienic food preparation. This under-rating of individual responsibility for hygienic food preparation was evident in another question of the survey in which approximately one-third of the homemakers stated they would not be concerned about a cut on their hand contaminating meat or poultry while preparing a meal for their family. An additional 13 percent of the homemakers indicated they would be concerned about a cut coming in contact with meat or poultry in the sense they would be worried that the meat or poultry would contaminate their cut! We also found that approximately one-third of the homemakers sampled indicated they would resort to taste to determine if the food inside a suspected can of food was all right—a disconcerting result in view of potential botulism.

Since there is a need to inform the homemaker on how to improve safety in storing, handling and preparing foods, we might ask what are some of the best ways to do this? In fact, we asked our sample of homemakers what was the one best way to get this kind of information to them. Television spots received the most votes—approximately 26 percent of the homemakers cited TV as the preferred manner to get food safety information communicated to them. Food labels were cited by an additional 16 percent of the homemakers. Radio spots were cited by only 3 percent of the homemakers as the best way to get this kind of information to them.

In summary, it appears that many people who buy and prepare food for themselves and their family assume that all products in retail markets are safe and wholesome. Although general experience may tend to support this for many products, consumers are still unaware that absolute protection is not always attainable and thus, as this survey indicates, they may underate their individual responsibilities for proper home storage and hygienic food preparation. A major problem relates to indifference or lack of knowledge on the part of a substantial number of homemakers regarding important time/temperature relationships in the preparation, serving and storage of cooked meat and poultry items and foods containing eggs or milk.

